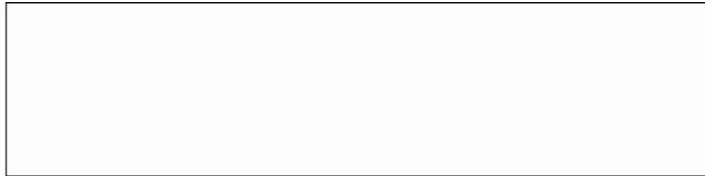




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Regulations on the Award of Doctoral Degrees of the Ludwig Maximilian University of Munich for the Faculty of Physics (2020)

Dated November 21, 2019

This document is an English translation of the
“Promotionsordnung der Ludwig-Maximilians-Universität München
für die Fakultät für Physik (2020)“

provided by IMPRS on Astrophysics.

It was translated in order to inform international non-German speaking
PhD students about the general promotional regulations.

**Please note: In legal questions, only the German version of
November 21, 2019 is binding.**

It can be found at:

<https://www.physik.uni-muenchen.de/promotion/promotionsordnung-2020.pdf>

Pursuant to Article 13(1), clause 2 in conjunction with Article 64(1), clause 5 of the Bavarian Law Governing Colleges and Universities [BayHSchG], the Ludwig Maximilian University of Munich issues the following regulations:

Contents

I. General information

- Section 1 Doctoral degree
Section 2 Governing bodies of the doctoral programme

II. Commencement of the doctoral programme

- Section 3 Admission with a Master's degree or equivalent
Section 4 Admission with a Bachelor's degree
Section 5 Application for admission as doctoral researcher
Section 6 Supervision
Section 7 Supervision/examination authorization
Section 8 Admission as doctoral researcher
Section 9 List of doctoral researchers

III. Doctoral examination

- Section 10 Application for admission to the doctoral examination
Section 11 Dissertation
Section 12 Admission to the doctoral examination
Section 13 Doctoral Studies Commission
Section 14 Assessment of the dissertation
Section 15 Participation of the other members of the Doctoral Studies Commission and the other authorized examiners at the faculty of Physics
Section 16 Acceptance of the dissertation
Section 17 Invitation to the oral examination (defence)
Section 18 Conduct and assessment of the oral examination
Section 19 Overall grade of the doctoral examination
Section 20 Repetition of doctoral studies, fail

IV. Completion of the doctoral programme

- Section 21 Publication of the dissertation
Section 22 Doctoral degree certificate and bearing the academic degree title
Section 23 Invalidity of the doctoral degree and withdrawal of the doctoral degree title

V. Honorary doctorate

- Section 24 Honorary doctorate

VI. Rules of procedure

- Section 25 Presentation and substantiation of reasons for reasons beyond their own control
Section 26 Recognition of competences
Section 27 Protection provisions under the Maternity Protection Act, under the Federal Parental Allowance and Parental Leave Act and under the Home Care Leave Act

Section 28 Compensation for disadvantages

Section 29 Access to the examination files, retention periods

VII. Final provisions

Section 30 Entry into force and transitional provisions

Appendix

Joint doctoral programme

I. General information

Section 1 Doctoral degree

- (1) The faculty of Physics awards the degree of Doctor of Natural Sciences ("*doctor rerum naturalium*" = "*Dr. rer. nat.*") from the Ludwig Maximilian University of Munich.
- (2) A doctoral degree is proof of the ability to carry out in-depth scientific work.
- (3) The doctoral degree comprises independent scientific work (dissertation) and an oral examination (defence).
- (4) The dissertation must cover a topic from a field with professional representation by a person from the faculty of Physics who has an authorization to examine pursuant to Section 7.
- (5) The doctoral degree referred to in Paragraph 1 may also be awarded jointly with a foreign university or faculty or a higher education institution based on a joint doctoral programme as set out in the Appendix.
- (6) In accordance with Section 24, the faculty of Physics may award the honorary academic degree of Doctor of Natural Sciences ("*doctor rerum naturalium honoris causa*" - "*Dr. rer. nat. h.c.*") for outstanding scientific achievements at the Ludwig Maximilian University of Munich.
- (7) All parties involved in the doctoral programme are obliged to adhere to the rules of good scientific practice (Guidelines of the Ludwig Maximilian University of Munich on Self-Regulation in Science of May 16, 2002, last amended by the resolution of September 30, 2014).

Section 2 Governing bodies of the doctoral programme

- (1) The governing bodies of the doctoral programme are the Dean at the faculty of Physics, the Doctoral Studies Commission (Section 13) and the Doctoral Studies Committee (Para. 2).
- (2) ¹The Doctoral Studies Committee consists of five members who are appointed by the Faculty council for four years from among the professors at the faculty of Physics. ²Re-appointment is permissible. ³The Dean is not appointed. ⁴The members of the Doctoral Studies Committee shall appoint a chair and a deputy chair from among their number. ⁵The Doctoral Studies Committee may delegate in a revocable manner the performance of certain tasks to the chair of the Doctoral Studies Committee and his/her deputy or deputies.

⁶The Doctoral Studies Committee decides in all matters concerning the doctoral degree where the Dean, the Doctoral Studies Commission, the Faculty council, or the faculty is not otherwise responsible. ⁷At the request of one or more of the parties involved, it may review decisions made in accordance with these Regulations on the Award of Doctoral Degrees, in particular those of the Dean, and can amend or revoke them as required.

II. Commencement of the doctoral programme

Section 3

Admission with a Master's degree or equivalent

- (1) ¹Master's graduates of a German university or other higher education institution can be admitted to a doctoral programme with a good degree in a mathematics or science master's programme; a '*Diplom*', '*Magister*', or teacher training certificate is deemed equivalent to a Master's degree here. ²A good result is at least the grade "good" or a position among the best 30% of participants who sat the examination in the respective year. ³On a grading scale from 1 (very good) to 5 (insufficient), the minimum grade requirement of "good" corresponds to an overall grade of 2.50 or better; an analogous decision is made based on identical criteria using other grading systems. ⁴If the admission prerequisites are satisfied solely on the basis of his or her placement within a rank, the applicant must provide evidence of his/her rank. ⁵In exceptional cases, the qualifications required may also be fulfilled by special academic achievements, e.g. academic publications which were produced during or after completion of the course of study if such achievements correspond to a good Master's degree. The Dean will make the decision.
- (2) ¹Admission requirements satisfied at foreign higher education institutions under Paragraph 1 must be recognized as prior credit unless there are substantial differences between the competences acquired (learning outcomes). ²The Dean will determine whether there is equivalence. ³The equivalence agreements approved by the Conference of Ministers of Culture and the Conference of University Rectors shall be taken into account. ⁴When determining the grade, the "Agreement on the Determination of the Overall Grade for Foreign University Entrance Certificates" (Resolution of the Conference of Ministers of Education and Cultural Affairs, 14-15 March 1991, as amended) shall be taken into account.
- (3) As a prerequisite for admission, additional work may be required to demonstrate in-depth knowledge of the subject area of the dissertation (in-depth knowledge requirement); the Dean decides on this in accordance with Section 8(5).
- (4) A doctoral programme to obtain the academic degree pursuant to Section 1(1) may neither be definitively failed nor successfully completed.

Section 4 **Admission with a Bachelor's degree**

(1) Bachelor's graduates from a German university or higher education institution can be admitted to a doctoral programme if all the following conditions are met:

1. ¹An excellent degree in a bachelor's programme of at least three years in mathematics or the sciences. ²An excellent Bachelor's degree is at least the grade "very good" or a position among the best 10% of participants who sat the examination in the respective year. ³On a grading scale from 1 (very good) to 5 (insufficient), the minimum grade requirement of "very good" corresponds to an overall grade of 1.50 or better; an analogous decision is made based on identical criteria using other grading systems. ⁴Section 3(1) clause 4 shall apply accordingly.
2. ¹An award of 60 ECTS points, after consultation with the mentor, from the range of compulsory or optional modules offered in one of the Master's programmes at the faculty of Physics in accordance with the examination and study regulations of the Master's programme. ²The relevant examinations must be sat within a year of enrolment on one of the Master's programmes at the faculty of Physics following admission as a doctoral researcher and passed with an average of at least 2.50 or better pursuant to the module grades weighted in accordance with the examination and study regulations of the Master's programme. ³Admission to the doctorate programme grants admission to one of the Master's programmes within the meaning of clause 2. ⁴It is also recommended that doctoral researchers complete a Master's programme; the research results from the Master's dissertation can lay the groundwork for the doctoral project and thus enable a swifter completion of the doctoral programme.
3. The consent of an authorized examiner from the faculty of Physics pursuant to Section 7 to supervise the Bachelor's graduate during the preparation for the Master's programme examinations as a mentor (mentor consent as defined in Section 5(3)).

(2) Section 3 (2) and (4) shall apply accordingly.

Section 5 **Application for admission as a doctoral researcher**

- (1) The application for admission as a doctoral researcher must be submitted in writing to the Dean's Office at the faculty of Physics.
- (2) The application for admission must be accompanied by originals or officially certified copies of:
 1. A curriculum vitae which in particular provides information about the researcher's educational achievements;

2. A declaration as to whether the applicant is aware of any criminal investigation against him or her;
 3. A declaration about previous passed or failed doctoral examinations, including the name of the university, topic, place and date of the examination;
 4. Certificates and written evidence in German or English demonstrating the fulfilment of the doctoral degree admission requirements pursuant to Sections 3 or 4;
 5. for applicants with a Master's degree or equivalent: a written supervision agreement pursuant to Section 6(2) from one of the authorized examiners at the faculty of Physics pursuant to Section 7;
 6. for applicants with a Bachelor's degree: a declaration that the applicant is aware of the need to obtain 60 ECTS points from one of the Master's programmes from the faculty of Physics as part of the doctoral degree requirements and that proof of this must be submitted to the Dean's Office in due time (Section 4(1) No. 2 clause 2);
 7. for applicants with a Bachelor's degree whose first degree was not obtained at a university in a member state of the European Union: proof of having successfully completed a GRE subject test in physics or mathematics; this proof is recommended for other applicants with a Bachelor's degree;
 8. A declaration that the applicant is aware that incorrect or incomplete information in the doctoral programme may result in sanctions, in addition to further sanctions, in particular that acceptance as a doctoral researcher may be revoked and that the doctoral programme will therefore be deemed to have failed.
- (3) ¹For applicants with a Bachelor's degree, the application must contain a mentor acceptance pursuant to Section 4 Para. 1 No. 3 from an authorized examiner from the Faculty of Physics pursuant to Section 7. ²The mentor must send their acceptance directly to the Dean. ³The acceptance letter should include an opinion of the quality of the applicant and confirm the mentor's willingness to supervise the applicant during preparation for the examinations in the Master's programme. ⁴The mentor can associate this acceptance with a potential interest in providing scientific supervision of a Master's dissertation or doctoral degree.
- (4) ¹Applicants with a Bachelor's degree who have been admitted as researchers must provide the Dean's office with proof of the having acquired 60 ECTS points from

one of the courses of study pursuant to Section 4(1) No. 2 within one year of enrolment on one of the Master's programmes of the faculty of Physics following admission as a doctoral researcher.

²These applicants must also submit a letter confirming supervision (§ 6 Para. 2) within two years at the latest.

Section 6 Supervision

- (1) ¹The doctoral researcher requires regular supervision. ²Section 7 Para. 5 shall remain unaffected hereby.
- (2) ¹In a letter confirming supervision, up to two authorised examiners as defined in Section 7 undertake to supervise the doctoral researcher for a specific period of time - usually three years - in the preparation of a dissertation. ²One of the supervisors is the first supervisor. ³If the doctoral degree is supervised by only one individual, this person is the first supervisor. ⁴The first supervisor and a provisional doctoral degree subject must be indicated in the letter confirming supervision. ⁵The letter confirming supervision may contain conditions which are likely to increase the chances of successful completion of the doctoral programme.
- (3) ¹The supervisor(s) and the doctoral researcher may, in addition to the letter confirming supervision, conclude an agreement which sets out the expectations, obligations and duties of both parties during the doctoral programme. ²The subject matter of the supervision agreement may, in particular, include the provision of regular proof of the progress of the doctoral project, either in the form of written reports, orally or in some other form. ³If the provisions of this supervision agreement are not fulfilled, sanctions may apply, namely the early termination of the doctoral programme.
- (4) ¹Letters confirming supervision/supervision agreements must comply with these Regulations on the Award of Doctoral Degrees and all other legal provisions and may not create or stipulate any obligations not expressly provided for in these doctoral regulations. ²These must be made in writing and signed by both parties; they are not effective until signed off by the Dean. ³A copy of the letter confirming supervision/supervision agreement as applicable must be submitted to the Dean's office where it is to be kept together with other documents of the doctoral programme.

Section 7 Supervision/examination authorization

- (1) ¹The doctoral researchers are supervised by authorised examiners in accordance with Art. 62(1) clause 2 BayHSchG in conjunction with the Directive on Higher Education Examiners [HSchPrüferV] whom are appointed by the Dean. ²If the supervisor is a full-time faculty (Art. 62(1) clause 2 No. 1 BayHSchG, Art. 2(3) clause 1, Paragraph 1 clause 1 No. 1 BayHSchPG) or a retired professor (Article 62(1) clause 2 No. 1 BayHSchG), he or she is deemed appointed as a supervisor. ³Retired professors and young scientists with doctorates who lead an independent externally

funded junior research group and meet the HSchPrüferV requirements, can be granted the right to supervise by the Dean upon application.

- (2) A supervisor may also be a professor of a foreign university or faculty or at another higher education institution, subject to the requirements set out in the Appendix to these Regulations on the Award of Doctoral Degrees.
- (3) ¹Usually, the first supervisor of the dissertation is an authorized examiner of the faculty of Physics at the Ludwig Maximilian University of Munich. ²A first supervisor who leaves the Ludwig Maximilian University of Munich or the foreign university or other higher education institution but remains a university lecturer may continue to supervise the doctoral researcher for up to three years and thereafter be appointed the first evaluator if they, the doctoral researcher and, where applicable, the second supervisor agree. ³The Dean may extend this period on a case by case basis.
- (4) ¹In individual cases, in particular, if a first supervisor is no longer able to supervise the doctorate, the Dean may approve an unsupervised dissertation. ²Approval is granted by means of an official decision (*Bescheid*).

Section 8 **Admission as a doctoral researcher**

- (1) ¹Acceptance as a doctoral researcher is decided by the Dean. ²For applicants with foreign qualifications as per Section 3(2) or Section 4(2), the Dean may seek the advice of the International Office of the Ludwig Maximilian University of Munich to assist with his or her decision. ³The decision should be taken immediately if possible. ⁴The crucial factor in admitting a doctoral researcher is whether there is a sufficient prospect of successful completion of the doctoral programme.
- (2) Admittance as a doctoral researcher is refused if
 1. the documentation is incomplete or incorrect;
 2. the admission requirements (Sections 3 and 4) are not fulfilled; or
 3. the applicant is considered not worthy of holding the doctoral degree pursuant to Art. 69 BayHSchG.
- (3) Acceptance or rejection as a doctoral researcher must be notified to the applicant by the Dean in the form of an official decision.
- (4) Upon admission as a doctoral researcher, the doctoral programme will be

deemed commenced, and the doctoral researcher will be added to the list of doctoral researchers at the faculty of Physics in accordance with Section 9.

- (5) ¹For applicants with a Master's degree or equivalent, the Dean may determine the need for specialization in accordance with Section 3(3) and require supplemental performances to demonstrate sufficient knowledge of the dissertation topic. ²Possible supplemental performance includes, for instance, attending relevant lectures, passing their examinations, or passing an oral examination lasting at least 30 minutes on a relevant technical subject. ³The Dean shall determine the scope of such supplemental performance and a reasonable period of time within which it must be done. ⁴The Dean shall also determine whether the supplemental performances are

1. a prerequisite for admission as doctoral researcher or
2. a prerequisite for admission to the doctoral examination pursuant to Section 12.

⁵These provisions form an integral part of the official decision to accept the doctoral researcher in accordance with Paragraph 3. ⁶If the deadline specified in clause 3 is not met in the case of clause 4 No. 1, the applicant's candidacy is rejected, and the doctoral programme is deemed not to have been commenced; an official decision to reject is then issued pursuant to Paragraph 3. ⁷In the case of clause 4 No. 2, Section 12(1) clause 3 applies in conjunction with Paragraph 2.

Section 9 **List of doctoral researchers**

- (1) ¹The Dean maintains a list of doctoral researchers containing the names of all doctoral researchers admitted for doctoral studies. ²If an applicant has been accepted as a doctoral researcher in accordance with Section 8, they must be added to the list of doctoral researchers at the faculty of Physics.
- (2) If the deadlines specified in Section 5(4) or Section 8(5) clause 3 are not met for reasons for which the doctoral researcher is responsible, or if admission to the doctoral examination is refused, the doctoral researcher is removed from the list of doctoral researchers.
- (3) The Dean's Office records and maintains data to be collected about doctoral researchers as per the University Statistics Act of November 2, 1990 (BGBl. I pp. 2414), as last amended by the Act of December 7, 2016 (BGBl. I p. 2826), as amended as of the indicated reference date; data is to be sent to the Bavarian State Office for Statistics.

III. Doctoral examination

Section 10 **Application for admission to the doctoral examination**

- (1) ¹The application for admission to the doctoral examination must be submitted to the Dean's Office at the Faculty of Physics in writing.

²The application must include the title of the dissertation.

(2) The following documents must be enclosed with the application for doctoral candidacy:

1. Seven identical, bound, paginated copies of the dissertation as per Section 11.
²The Doctoral Studies Committee may, generally or on a case by case basis, require that the dissertation be also submitted in electronic form and may set out technical requirements for this;
2. A copy of the dissertation abstract in accordance with Section 11(5) clause 2;
3. A list of previous publications as per Section 11(1) clause 2;
4. An affidavit demonstrating that the researcher's scientific work is their own;
5. A declaration that the dissertation has not been submitted, either in whole or in substantial parts, to a different Doctoral Studies Commission;
6. A police clearance certificate or, for foreign applicants, an equivalent certificate issued by the relevant foreign authority; the police clearance certificate/equivalent certificate must not be older than three months;
7. Current versions of the documents and explanatory notes listed under Section 5(2) Nos. 1 to 4 and 8;
8. A proposal for the members of the Doctoral Studies Commission.

(3) An application for admission to the doctoral examination can only be withdrawn if the doctoral researcher has not had a negative decision on the dissertation, has not begun the oral examination and there has been no scientific misconduct.

Section 11 Dissertation

- (1) ¹The dissertation must demonstrate the ability of the doctoral researcher to carry out in-depth scientific work independently. ²Publication of the parts of the dissertation is permitted subject to Paragraph 7. ³The dissertation shall consist of a thesis writing or more published papers (cumulative dissertation) in accordance with Paragraph 2.
- (2) ¹A cumulative dissertation must, in its entirety, be an equivalent performance to a dissertation in accordance with Paragraph 1. ²It requires the prior written consent of the first supervisor and the approval of the Dean in accordance with the general criteria laid down by the Faculty council; the evaluators are responsible for assessing equivalence.

³With a cumulative dissertation, the scientific problem, the approaches taken to solve it, the results and conclusions, and the related literature must be presented in a concise version. ⁴The publications accepted for publication and appearing in print or in electronic journals or archives are part of the dissertation and are to be printed with it remaining in compliance with copyright law. ⁵The researcher's own scientific achievements must be identified clearly; it must also be explained in detail which parts were developed by the candidate and which parts were done by co-authors.

- (3) A dissertation written outside of the faculty of Physics pursuant to Section 7(2) must be discussed with an authorized examiner at the faculty of Physics before submission and must be approved by him.
- (4) ¹The dissertation must be written in German or English.
- (5) ¹The dissertation must be completed independently. ²It must begin with an abstract of no more than one page, which discusses the problem and the results. ³The dissertation must include a table of contents and a full bibliography and other sources of information. ⁴The researcher's own publications in accordance with Paragraph 1 clause 2 must be indicated as such.
- (6) ¹The dissertation must be submitted as a print-ready electronic document and as a standards A4 manuscript. ²Additional content may be added to the dissertation or the scientific documentation accompanying it that are not intended for printing and are indicated as such. ³A cumulative dissertation must - notwithstanding Section 21(5) clause 2 - be submitted in a bound form. All specialist articles must have been copied to standard A4 format, irrespective of the print format of the original publications.
- (7) ¹Own work that has already served examination purposes may not be submitted as a dissertation. ²Results, however, may be used for the dissertation; the work in question must be indicated as such.

Section 12

Admission to the doctoral examination

- (1) ¹The Dean shall decide on the application for doctoral candidacy. ²If a doctoral researcher with a Bachelor's degree was accepted, evidence of having acquired 60 ECTS points from one of the master's degree programmes at the faculty of Physics is a prerequisite for admission to the doctoral examination. ³ If upon acceptance of a doctoral researcher with a Master's degree or equivalent qualification, additional performance was required in accordance with Section 8(5) clause 4 no. 2, admission to the doctoral examination requires that this performance be completed on time.
- (2) Section 8(1) clause 4, Paragraphs 2 and 3 shall apply accordingly.
- (3) If the application for doctoral candidacy is approved, the Dean will make

the decisions referred to in Section 13 as promptly as possible.

Section 13 Doctoral Studies Commission

- (1) ¹The Dean appoints a Doctoral Studies Commission consisting of four examiners and a deputy representative who, in the event of the incapacity or resignation of a member of the Commission, shall replace him or her, with the exception of the first supervisor. ²The first supervisor and doctoral researcher may submit related proposals. ³All members of the Commission and the deputy representative must be authorized examiners in accordance with Section 7.
- (2) ¹The Doctoral Studies Commission consists of a chair, a first evaluator, a second evaluator, and a secretary who is also an authorized examiner. ²The first evaluator is the first supervisor; with unsupported dissertations, the first evaluator is nominated by the Dean in accordance with Section 7(5). ³At least three examiners and one evaluator must belong to the faculty of Physics. ⁴An evaluator may belong to another German or foreign scientific institution. ⁵The Dean shall ensure that the subject areas covered by the dissertation have adequate representation. ⁶If the Dean is a member of the Doctoral Studies Commission, her or his duties relating to the carrying out of the doctoral examination will be taken on by the Vice dean.

Section 14 Assessment of the dissertation

- (1) ¹The Dean shall forward one copy of the dissertation to each member of the Doctoral Studies Commission and the deputy representative; the remaining copies shall remain in the Dean's office. ²The Dean asks the first and second evaluators to submit their comments within a reasonable period of time. ³The reports should be submitted within two months of submission of the dissertation.
- (2) ¹The evaluators shall prepare an evaluation, taking into account Section 11(1) clause 1 and Paragraph 2 clause 2. Every evaluation must identify the doctoral researcher's work and give a recommendation for acceptance, acceptance with the condition that suggestions for changes or additions be considered before publication, return for revision or rejection of the dissertation. ³Suggested amendments/additions and rework must be sufficiently defined.
- (3) ¹The evaluation must come with a proposed grade based on the following scale:

| | | | |
|-----|----------------------------|----------------|---|
| 0.7 | " <i>summa cum laude</i> " | = excellent | = the highest praise: outstanding work |
| 1.0 | " <i>magna cum laude</i> " | = very good | = great praise: a particularly commendable work |
| 2.0 | " <i>cum laude</i> " | = good | = praise: the work meets the requirements |
| 3.0 | " <i>rite</i> " | = sufficient | = sufficient: work remains despite issues |
| 4.0 | " <i>insufficenter</i> " | = insufficient | = insufficient: work is not adequate |

²Interim grades ("± 0.30") are allowed for grades 1.0, 2.0 and 3.0; grade 3.30 is "*insufficenter*". ³The proposed grade "*insufficenter*" can only come with the recommendation to reject the work. ⁴The recommendation to return the dissertation for a rework is regarded as an objection to the acceptance of the dissertation.

- (4) ¹The evaluations must be forwarded to the Dean. ²The Dean ensures that this is done within a reasonable period of time.

Section 15

Participation of other members of the Doctoral Studies Commission and other authorized examiners at the faculty of Physics

- (1) ¹Upon the receipt of the evaluations, the Dean will send them to members of the Doctoral Studies Commission who are not nominated as evaluators, as well as for information purposes to the deputy representatives. ²They may give their response to the dissertation. ³The responses are to be submitted within one week of receipt. ⁴Such responses are allowed to contain proposed grades in accordance with Section 14 Paragraph 3; reasons must be given in writing for such grade proposals.
- (2) ¹The dissertation, together with copies of the evaluations will be displayed in the Dean's office for two weeks. ²The Dean notifies the remaining authorized examiners at the faculty of Physics of this by sending a copy of the abstract in accordance with Section 10(2) No. 2. ³For the time of the display of the dissertation, the other authorized examiners of the faculty of Physics have the right to read the dissertation and to give an appropriate response and a proposed grade with reasons in accordance with Section 14(3).

Section 16

Acceptance of the dissertation

- (1) ¹The dissertation is deemed to have been accepted if no objections have been raised against it with the basis of the responses in accordance with Section 14(3) and all responses in accordance with Section 15. ²If the grades proposed by the evaluators are identical and no other grade has been proposed in any of the responses as defined in Section 15, the grade proposed by the evaluators is deemed the dissertation grade. ³Otherwise, the Doctoral Studies Commission will decide on the Grade of the accepted dissertation. ⁴The chair of the Doctoral Studies Commission makes the determination in accordance with clause 1.
- (2) ¹The dissertation is deemed to be rejected if the evaluations and all the responses as defined in Section 15 are associated with the proposed grade of "*insufficienter*" or recommend a rejection. ²The determination under clause 1 is made by the chair of the Doctoral Studies Commission.
- (3) ¹If, following the evaluations or responses, an objection is made to accepting the dissertation, the Doctoral Studies Commission, after hearing the examiners or other persons authorized to examine the dissertation at the faculty of Physics, decides on whether to accept the dissertation, to accept subject to the condition that proposed amendments/additions be made prior to publication; return the dissertation for revision; reject the dissertation; on the grade, or whether to obtain further evaluations from university lecturers at the faculty of Physics or from external scientists. ²The Doctoral Studies Commission may make acceptance of the dissertation subject to the condition that proposals for amendments or additions be considered before publication if the issues with the dissertation do not justify either a rejection or a return for revision.
- (4) ¹In the event of substantial objections, the Dean may return the dissertation to the doctoral researcher for a one-off revision if there is the expectation that the dissertation may be accepted after revision on the basis of the work done to date. ²During this process, the Dean shall immediately inform the doctoral researcher of the issues with the dissertation and to give an appropriate time period to revise it; this may not exceed two years. ³During this period, one copy remains on file. ⁴Instead of a revision, the doctoral researcher can submit a new dissertation on the same topic within the time period.
- (5) The Dean notifies the doctoral researcher of the decision to return the dissertation for revision or to reject in the form of an official decision.
- (6) ¹The Doctoral Studies Commission may propose that an application for a doctorate be withdrawn provided that an official negative decision has not been issued. ²This is not possible in the event of scientific misconduct.
- (7) If the dissertation is rejected, the application for doctoral candidacy will have failed, and the doctoral programme ends.

Section 17 **Invitation to the oral examination (defence)**

- (1) If the dissertation is accepted in accordance with Section 16, the time and place of the oral examination will be scheduled by the Dean.
- (2) ¹The Dean invites the doctoral researcher and members of the Doctoral Studies Commission to an oral examination one week before the date. ²The oral examination is held and evaluated by the members of the Doctoral Studies Commission. ³The oral examination is chaired by the chair of the Doctoral Studies Commission. ⁴The first evaluator takes part in the oral examination.
- (3) ¹The chair of the Doctoral Studies Commission may, with the consent of the doctoral researcher, allow the general public to attend the oral presentation at the beginning of the oral examination (Section 18(1) clause 2); in this case, the date will be announced on a notice board. ²The audience will not be allowed to attend the in-depth scientific discussion (Section 18(1) clause 3); the determination and announcement of the result of the oral examination (Section 18(3) in conjunction with Section 19(3) clause 1); and the announcement of the other examination results in accordance with Section 19(3) clause 1.
- (4) If the doctoral researcher does not take the oral examination for reasons for which he or she is responsible, the examination is deemed failed.

Section 18 **Conduct and assessment of the oral examination**

- (1) ¹The oral examination is held in German or English and lasts approximately one hour. ²The doctoral researcher will give a 20-minute presentation on the main findings of his/her dissertation. ³This will be followed by an in-depth scientific discussion, which is intended to show that the doctoral researcher has an adequate command of his or her field of work and the fields it covers, and that he or she is familiar with essential structures and modern developments in his or her subject.
- (2) ¹In the cases of Section 1(5), in particular, the oral examination may exceptionally be held via video conference if both the members of the Doctoral Studies Commission and the doctoral researcher have given their prior written consent. ²A proper examination procedure must be assured. ³Data protection concerns and a technically trouble-free procedure must be assured. ⁴There must be no electrical recording of the examination.
- (3) The minute-taker must draw up minutes of the main items and results of the oral examination; the minutes will be signed by the chair of the Doctoral Studies Commission.
- (4) ¹The performance of the doctoral researcher is assessed after joint discussion by the individual examiners based on the grade in Section 14 Paragraph 3.

²The grade for the oral examination will be calculated by the Chair of Doctoral Studies Commission from the unrounded arithmetic mean of the grades proposed by the examiners, to two decimal places. ³For a grade point average it reads:

| | | |
|-------------------|----------------------------|--------------|
| of up to 0.99 | " <i>summa cum laude</i> " | = excellent |
| from 1.0 to 1.49 | " <i>magna cum laude</i> " | = very good |
| from 1.50 to 2.39 | " <i>cum laude</i> " | = good |
| from 2.4 to 3.29 | " <i>rite</i> " | = sufficient |

⁴If the doctoral researcher does not achieve a minimum grade of at least "*rite*" (3.29) in the oral examination, the oral examination is failed.

- (5) In the event of failure in the oral examination, the Dean shall issue an official decision to the doctoral researcher, which shall also provide information about the possibilities of repetition in accordance with Section 20 (4).

Section 19 **Overall grade of the doctoral examination**

- (1) The doctoral examination is passed when the dissertation has been accepted and the oral examination passed.
- (2) ¹The overall grade of the doctoral examination is determined by dividing the sum of the dissertation grade multiplied by 1.5 and the oral examination grade by 2.5. ²If both the dissertation and the oral examination have a grade better than 1.00, the grade "*summa cum laude*" (excellent) may be awarded by means of a unanimous decision of the Doctoral Studies Commission. ³Otherwise, the grading scale in Section 18(4) clause 3 shall apply.
- (3) ¹Following the oral examination, the chairperson of the Doctoral Studies Commission shall inform the doctoral researcher of the dissertation evaluation, the result of the oral examination and the overall grade of the passed doctoral examination. ²The doctoral researcher must be informed that the certificate will only be presented after publication of the dissertation (Section 21) and that the doctoral researcher is only entitled to hold the doctoral degree after this date. ³The Chair issues the doctoral researcher an official decision containing the overall grade, title and grade of the dissertation and the grade of the oral examination, and draws attention to the provisions in accordance with clause 2.

Section 20 **Repetition of doctoral studies, fail**

- (1) If the dissertation is rejected or returned for revision in accordance with Section 16 Paragraphs 2 or 4, the doctoral researcher may submit a revised or a new dissertation on the same topic (second version of the dissertation) to the Dean's Office within a reasonable period of up to two years after rejection or return.

- (2) If the doctoral researcher does not submit a second version of the dissertation within the deadline specified in Paragraph 1 for reasons for which he or she is responsible, the dissertation is deemed rejected.
- (3) ¹The second version of the dissertation must be submitted to the members of the original Doctoral Studies Commission and evaluated by them, if it is still available. ²Sections 14 and 15 apply accordingly. ³If the assessment of the second version is "*insufficenter*" or if it is not accepted in accordance with Section 16 Paragraphs 1 to 3, the dissertation is deemed to have been rejected; the dissertation cannot be returned again for revision nor can a new piece of work on the same subject be submitted.
- (4) ¹If the dissertation submitted to the faculty of Physics has been accepted in accordance with Section 16 but the oral examination has not been passed, only the examination must be repeated. ²The repetition may be done only once, at the earliest after three months and at the latest within one year after passing the failed oral examination. ³If this period expires, the doctoral programme comes to an end.
- (5) The Dean informs the doctoral researcher of whether he or she has passed or failed by means of an official decision.
- (6) ¹If the dissertation was rejected or the oral examination was not passed, the doctoral examination is failed for the first time. ²The doctoral researcher may apply for acceptance as a doctoral researcher a second time with a different subject. ³If this doctoral programme also fails, the doctoral examination is failed irrevocably.

IV. Completion of the doctoral programme

Section 21

Publication of the dissertation

- (1) ¹After passing the doctoral examination, the dissertation must be made available to the scientific public in an appropriate format within one year. ²In special cases, the Dean may extend this deadline in accordance with clause 1 up to a total duration of three years if a justified request from the doctoral researcher is received before the publication deadline expires. ³If the obligation in clause 1 is not fulfilled within three years of passing the doctoral examination, the rights acquired through the doctoral examination shall lapse.
- (2) ¹If acceptance of the dissertation is subject to conditions in accordance with Section 16(3) clause 2, the amended version must be submitted to the Doctoral Studies Commission before going to press and a confirmation must be obtained from this Commission that the conditions were met. ²Other changes to the dissertation prior to its printing are also only permitted with the approval of the Doctoral Studies Commission.
- (3) ¹A dissertation is made accessible to the scientific public in an appropriate manner if it has been submitted to the Ludwig Maximilian University of Munich

and made sufficiently accessible to the specialist public. ²In order to make a dissertation easily accessible to the Ludwig Maximilian University of Munich and/or to prove that the dissertation is sufficiently available to the specialist public, six printed and bound copies of the dissertation must be made available to the University Library free of charge. ³In addition, the dissertation must either be published:

1. in a magazine;
2. in a series of publications;
3. as an individual publication in a commercial publishing house with a minimum print run of 150 copies guaranteed by the publisher; or
4. in an electronic version.

⁴The versions under clauses 2 and 3 must have identical content. ⁵The electronic version as per clause 3 No. 4 is to be uploaded to the digital dissertation server of the Ludwig Maximilian University of Munich. ⁶The University Library must be granted the right to make and distribute further copies of the dissertation within the framework of the University Library's statutory duties and to make the dissertation publicly accessible on data networks. ⁷The University Library may impose additional requirements, in particular of a technical nature, both of the versions in clause 2 and those in clause 3. ⁸In special cases, the Doctoral Studies Commission may permit forms of publication other than those mentioned in clause 3. ⁹The University Library shall confirm that the actions of the doctoral researcher fulfil the duties set out in clauses 1 to 8.

- (4) ¹The chair of the Doctoral Studies Commission may also consider the duty to make the dissertation available to the scientific public in an appropriate manner to be fulfilled if the requirements of Paragraph 1 have been fulfilled on the basis of a with a time delay blocking note due to
1. an application procedure under patent law, or
 2. a publication in a magazine.

²The prerequisite is that the requirements specified in Paragraph 1 have been met in full, the time at which publication takes place at the latest is indicated in the blocking note, and the university library can publish the dissertation independently. ³Para. 1 clauses 2 and 3 and Para. 3 clause 9 shall apply accordingly.

- (5) ¹Paragraph 1 to 3 shall also apply to cumulative dissertations. ²Instead of repeating parts that have already been published or accepted for publication elsewhere, cumulative dissertations only need to provide corresponding references; Section 11(6) clause 3 remains unaffected.

Section 22

Doctoral degree certificate and bearing the academic degree title

- (1) The date of the doctorate is the date on which the oral examination was passed.

- (2) ¹The doctoral degree certificate confirms the conferral of a doctorate in German and English and names the doctoral grade, the dissertation subject, the overall grade, and the date of the conferral pursuant to Paragraph 1. ²The certificate bears the signatures of the Dean of the faculty for Physics and the President of the Ludwig Maximilian University Munich and is sealed with the university seal.
- (3) ¹Once the requirements of Section 21 are met, the doctorate is conferred without undue delay upon presentation by the Dean of the doctoral certificate; the doctoral programme comes to an end. ²Only now does the conferee have the right to bear the academic title named in Section 1(1). ³The Dean can, however, grant the candidate a temporary right to bear the academic title where
1. Section 21(2) is not applicable or has not been fulfilled; or
 2. in the cases falling under Section 21(3) clause 3 Nos. 1 to 3, a corresponding contract or confirmation of the fulfilment of these requirements must exist.

Section 23

Invalidity of the doctoral degree and withdrawal of the doctoral degree title

- (1) ¹Shall it come to light, before the doctoral certificate is issued, that the doctoral researcher has cheated during the doctoral programme or that the award of the academic degree would otherwise prove to be unlawful, the Doctoral Studies Committee, in consultation with the Dean, shall declare that all previously acquired awards are invalid and bring the doctoral programme to an end. ²The doctoral programme ends and the doctoral degree is deemed to have been failed permanently. ³The Dean notifies the person concerned of the resolution by means of an official decision.
- (2) ¹If the deception or other unlawful act only comes to light after the doctoral certificate has been issued, the Doctoral Studies Committee may subsequently declare the doctoral examination failed after consultation with the Dean; the doctoral degree title awarded in accordance with Art. 69 BayVwVfG in conjunction with Art. 48 BayVwVfG may be withdrawn. ³Para. 1 clause 3 applies accordingly. ⁴The doctoral degree certificate is withdrawn.
- (3) ¹If the deception turns out to be immaterial, the Doctoral Studies Committee may establish that an act of deception was committed against the person(s) concerned where there is an interest in doing so. ²Such a situation may arise in particular in general when needing to preserve confidence in the institution of doctoral study and in compliance with the rules of good scientific practice as well as the interests of third parties in clarifying the position with respect to their authorship.
- (4) ¹In the cases set out in Paragraphs 2 and 3, the person concerned is required to attach a clearly visible note indicating the deception to all copies of the dissertation waiting to be distributed. ²This shall also apply to electronically published versions of the dissertation. ³To meet the obligations from clauses 1 and 2, all persons and

institutions, including, in particular, university libraries, specialist libraries and publishing houses, which it is assumed have copies of the dissertation, shall be informed immediately by the person concerned. ⁴Clause 3 shall apply accordingly with regard to copies of the dissertation which have already been distributed.

- (5) The Doctoral Studies Committee may use digital aids to identify attempts at deception.

V. Honorary doctorate

Section 24 Honorary doctorate

- (1) ¹The faculty of Physics may award the honorary academic degree of Doctor of Natural Sciences ("*doctor rerum naturalium honoris causa*" - "*Dr. rer. nat. h.c.*") for the Ludwig Maximilian University of Munich as a recognition of rare outstanding scientific achievement. ²An honorary doctorate based on non-scientific achievement and merit (e.g. patronage) is not allowed.
- (2) ¹A "*Dr. rer. nat. h.c.*" is awarded by application by two faculty professors and by resolution of the Faculty council of the faculty of Physics. ²The invitation to a session of the Faculty council must expressly mention that an honorary doctorate is to be discussed and decided upon. ³Acceptance of the resolution requires a majority of the members of the Faculty council as well as a majority of the professors on the Faculty council; otherwise the application is rejected and cannot be re-submitted to the Ludwig Maximilian University of Munich.
- (3) The honorary doctorate is awarded in a ceremony by means of the presentation of a certificate of honour, in which the merits of the honoured person are highlighted.
- (4) Section 23 shall apply accordingly.

VI. Rules of procedure

Section 25 Presentation and substantiation of reasons beyond their own control

¹Reasons beyond the researcher's own control must be submitted to the Dean's office in writing without undue delay after they arise; these reasons must be substantiated in a credible manner. ²In the event of illness, a doctor's certificate must be presented; a sick note (*Arbeitsunfähigkeitsbescheinigung*) is not sufficient. ³On a case by case basis or as a general rule, the Dean may require the doctor's certificate to be issued by a medical doctor chosen by the Dean. ⁴If the reason(s) are accepted, a new date will be set. ⁵For separable examinations, previous examination results will be recognized as prior credit.

Section 26

Recognition of competences

- (1) ¹Study periods, courses and examinations which have been passed in another course of study at the Ludwig Maximilian University in Munich or in courses of study at other state or state-recognized higher education institutions in the Federal Republic of Germany, by successful participation in a distance learning unit within the framework of a course of study at a state or state-recognized higher education institution in the Federal Republic of Germany or in courses of study at foreign higher education institutions, are to be recognized as prior credit, unless there are substantial differences with regard to the acquired competences (learning outcomes). ²The same applies for study periods, courses and examinations which were undertaken at a state or state-approved university in Bavaria within the framework of other studies pursuant to Art. 56(6) Nos. 1 and 2 BayHSchG, in special study programmes pursuant to Art. 47(3) clause 1 BayHSchG or at the "Virtuelle Hochschule Bayern".

- (2) ¹Competences acquired as part of continuing education studies pursuant to Art. 56(6) No. 3 BayHSchG or acquired outside the university sector may be credited if equivalent. ²Competences acquired outside of higher education may not replace more than 50% of the required competences.

- (3) ¹If studies or examinations are recognized as prior credit, the grades - insofar as the grading systems are identical - are transferred over and incorporated into the determination of grades based on these Regulations for the Award of Doctoral Degrees. ²The incorporated grades are indicated as having been transferred over. ³If the grading systems do not match, the Dean will determine a grade for the credited course and examination on the basis of the assessment levels under Section 14(3) and acts in accordance with clauses 1 and 2. ⁴Clauses 1 to 3 apply accordingly to the allocation of ECTS points.

- (4) ¹Candidates must submit documents required for recognition to the Dean's Office by the end of the first semester after the commencement of the doctoral programme at the latest, provided that study periods and courses or examinations already completed before the commencement of the doctoral programme are to be recognized. ²When crediting periods of study, courses and examinations completed after the beginning of the doctoral programme, the documents must be submitted to the Dean's Office in the semester following their acquisition. ³As a rule, proof of periods of study to be recognized as prior credit is usually provided by submitting a transcript from the university at which the period of study was completed. ⁴With respect to the recognition of courses and examinations, a certificate from the university at which the courses and examinations were completed must be submitted, which must state
 1. which individual examinations (oral and/or written) were to be taken in which subjects within the examination as a whole;
 2. which examinations were actually taken;

3. the assessment of the courses and examinations and - where applicable - the subject grade.
4. the grading system on which the valuation is based,
5. with programmes of study with credit point systems, the credit points awarded for the individual courses in which the courses and examinations to be credited were obtained, as well as the number of credit points required for successful completion of the programme of study
6. the scope of the individual courses in which the courses and examinations to be recognized as prior credit were completed, in semester hours per week (SWS), and
7. whether an overall examination has not been passed on the basis of the available results or is deemed not to have been passed due to other circumstances.

⁵Appropriate evidence (diplomas, certificates, documentation, etc.) must be submitted for the recognition of competences acquired outside the university sector.

- (5) A certified German translation may be required for certificates and documents not issued in German.
- (6) The Dean decides on the crediting of periods of study, courses and examinations after hearing the relevant subject specialist.

Section 27

Protection provisions under the Maternity Protection Act (MuSchG), under the Federal Parental Allowance and Parental Leave Act (BEEG), and under the Home Care Leave Act (PflegeZG)

- (1) Protection under the provisions of MuSchG as amended is available in accordance with the deadlines of the BEEG as amended with respect to parental leave and the care of a close relative within the meaning of Section 7(3) PflegeZG in its currently valid version, or a person in need of care within the meaning of Sections 14, 15 of Social Code Book XI (SGB XI) as amended.
- (2) ¹The faculty shall determine which courses, including time, location and schedule required by the Ludwig Maximilian University of Munich and which are compulsory for students, shall not be compulsory for pregnant researchers or researchers who are currently breast-feeding; the same shall apply to internships which are compulsory as part of the degree programme. ²Candidates who are pregnant or currently breastfeeding should inform the Dean's office as early as possible. ³The Dean, in consultation with the Lecture manager, shall set out the specific protection measures required on account of the case-independent risk assessment pursuant to

clause 1 without undue delay, and shall inform the pregnant/breast-feeding doctoral researcher of the result. ⁴At the same time, the Lecture director shall discuss with her further adjustments to the course and examination conditions to meet the needs of the doctoral researcher during pregnancy or breastfeeding. ⁵Any disadvantages due to pregnancy, childbirth or breastfeeding must be prevented or compensated for. ⁶The general regulations on disadvantage compensation remain unaffected. ⁷An application for an examination does not constitute an express declaration that the protection periods have been waived, even if the application is made after prior formal notification of pregnancy or breastfeeding pursuant to clause 2.

Section 28 Compensation for disadvantages

- (1) ¹Severely disabled persons and those granted the same treatment as disabled persons (Section 2(2,3) of German Social Code IX (SGB IX), as amended) shall, upon application by the Doctoral Studies Commission, be granted an extension of the examination period up to one quarter of the regular duration of the examination, depending on the proven severity of the examination-relevant disability. ²In cases of a particularly severe examination-relevant disability, the examination period may be extended by up to half of the normal duration of the examination upon request. ³In addition to or in lieu of an extension of the examination period, a different appropriate compensation may be granted.
- (2) ¹Other doctoral researchers who are significantly impaired in the completion of the examinations due to an established, not only temporary physical disability or chronic illness, may be granted disadvantage compensation in accordance with Paragraph 1. ²In the case of a temporary disability, other appropriate measures may be taken.
- (3) ¹Applications for disadvantage compensation must be submitted before registering for an examination or at least one month before the examination in question at the latest. ²The disability must be substantiated. ³The Dean may require that the credibility of the certificate be substantiated by a medical certificate. ⁴Section 25 clauses 2 and 3 shall apply accordingly.

Section 29 Access to the examination files, retention periods

- (1) ¹Within three months after the completion of the doctoral examination, the doctoral researcher will be granted access to the reports and minutes of the doctoral examination by the Dean of the faculty of Physics upon request within a reasonable period of time. ²The Dean's Office may announce that, in derogation of clause 1, such an inspection is to be carried out somewhere other than the Ludwig Maximilian University of Munich; an announcement of the other location by the Dean's Office online shall suffice.
- (2) ¹The complete examination files, including the dissertation, shall be kept for at least five years. ²The basic file, which contains in particular a copy of the doctoral certificate, is kept indefinitely. ³It can be retained in electronic form.

VII. Final provisions

Section 30 Entry into force and transitional provisions

- (1) These Statutes shall enter into force on 1 January 2020.
- (2) Candidates who have already been admitted to the doctoral program after submitting a dissertation in accordance with the Regulations on the Award of Doctoral Degrees of the Ludwig Maximilian University of Munich for the faculty of Physics dated April 19, 1993 (KWMBI II p. 483), last amended by the Regulations of November 24, 2003 (KWMBI II 2004 p. 932), shall complete their doctoral programme in accordance with the Regulations on the Award of Doctoral Degrees of the Ludwig Maximilian University of Munich for the faculty of Physics of April 19, 1993, as amended.
- (3) ¹Candidates whose dissertation subject is one as defined in Section 1(4) can declare that as of January 1, 2020 they were already preparing a dissertation or had worked on a dissertation and are intending to complete their doctoral programme at the Ludwig Maximilian University of Munich on the basis of the Regulations on the Award of Doctoral Degrees of the Ludwig Maximilian University of Munich for the faculty of Physics dated 19 April 1993 as amended; and have until 30 June 2020 (hard deadline!) to do so. ²The declaration pursuant to clause 1 is irrevocable.
- (4) ¹Candidates whose dissertation topic is in a subject as defined in Section 1(4) can declare that as of January 1, 2020 that were already preparing a dissertation or had worked on a dissertation and are intending to complete their doctoral programme at the Ludwig Maximilian University of Munich on the basis of the Regulations on the Award of Doctoral Degrees of the Ludwig Maximilian University of Munich for the faculty of Physics dated # as amended; and have until 30 June 2020 (hard deadline!) to do so. ²The date on which the researchers started working on the dissertation must be indicated. ³The declarations in accordance with clauses 1 and 2 are irrevocable. ⁴If there is sufficient indication that researchers have been working on their dissertations for longer than stated in clauses 1 and 2, the doctoral programme based on the Regulations on the Award of Doctoral Degrees of the Ludwig Maximilian University of Munich for the faculty of Physics dated # shall be deemed to have commenced earlier as appropriate; letters confirming supervision and/or supervision agreements shall be deemed to have been issued/entered into earlier as appropriate. ⁵The deadlines must be calculated accordingly.
- (5) If neither a declaration pursuant to Para. 3 nor pursuant to Para. 4 is made, Para. 1 shall apply.
- (6) As of January 1, 2020, based on the Regulations on the Award of Doctoral Degrees of the Ludwig Maximilian University of Munich for the faculty of Physics dated April 19, 1993, as amended by the Regulations of November 24, 2003, it is no longer possible to start doctoral programmes if the subject dissertation comes from an area defined in Section 1(4).

Appendix

Joint doctoral programme

A. Doctoral programme carried out jointly with a foreign university/faculty

- I. A doctoral programme carried out jointly with a foreign university/faculty requires
 1. an agreement on cross-border doctoral degree supervision ("cotutelle") be concluded with the foreign university/faculty;
 2. the prerequisites for admission as a doctoral researcher, a letter confirming supervision and the admission requirements both at the foreign university/faculty and, in accordance with Sections 3 or 4 of these Regulations on the Award of Doctoral Degrees of the faculty of Physics at the Ludwig Maximilian University of Munich are satisfied, and
 3. the doctoral researcher undertakes to bear a single doctoral degree, either that of the Ludwig Maximilian University of Munich or that of the foreign university/faculty, but not both.
- II. ¹The Dean of the faculty of Physics concludes an agreement with the foreign university/faculty. ²The agreement shall be signed both by the Dean and the president of the foreign university and by the Dean of the faculty of Physics and the president of the Ludwig Maximilian University of Munich.
- III. ¹After the joint supervision, the doctoral researcher shall be awarded a doctoral degree from the foreign university/faculty and the degree of doctor of natural sciences ("*doctor rerum naturalium*" = "*Dr. rer. nat.*") from the Ludwig Maximilian University of Munich. ²The doctoral researcher shall receive an official decision confirming joint supervision and referring to the obligation under No. I. 3.

B. Joint supervision with a higher education institution

- I. A joint supervision with a higher education institution requires that a cooperation agreement exists and has been approved by the Faculty council.
- II. Equivalent supervisors can also be a full-time professor (Article 62(1) clause 2 No. 1 BayHSchG, Article 2(3) clause 1, Paragraph 1 clause 1 No. 1

BayHSchPG) from a higher education institution.

- III. The doctoral certificate contains the information that the academic degree is awarded in a joint doctoral programme with the higher education institution in question.

Issued on the basis of the resolution of the Senate of the Ludwig Maximilian University of Munich from November 14, 2019 and the approval of the President of the Ludwig Maximilian University of Munich dated November 21, 2019, No.1.3-456.17:1

Munich, November 21, 2019

signed

Prof. Dr. Bernd Huber

President

The Regulations from November 21, 2019 were promulgated at the Ludwig Maximilian University of Munich and the promulgation was published on November 21, 2019, by means of a notice on a bulletin board at the Ludwig Maximilian University of Munich. The date of publication is therefore November 21 2019.