



Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

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## Department of Physics (D-PHYS)

### Detailed stipulations regarding the doctorate of 27 January 2022

This English translation serves information purposes only and has no legal force. The original German version is the legally binding document

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*The ETH Zurich Executive Board,*

at the request of the Department of Physics at ETH Zurich<sup>1</sup> and pursuant to Art. 52 of the ETH Zurich Ordinance on the Doctorate of 23 November 2021<sup>2</sup>,

*hereby decrees the following detailed stipulations regarding the doctorate:*

## Section 1 – General

### Art. 1 Scope and purpose

<sup>1</sup> These detailed stipulations govern the department-specific details for the doctorate at the Department of Physics at ETH Zurich (D-PHYS). They are based on the basic provisions of the ETH Zurich Ordinance on the Doctorate (DV) of 23 November 2021<sup>3</sup> and on the Rector's Implementation Provisions for the ETH Zurich Ordinance on the Doctorate (AB) of 23 November 2021<sup>4</sup>.

<sup>2</sup> The measures described below are intended to contribute to ensuring the quality, reliability and efficiency of the implementation and processing of doctorates at D-PHYS. The doctoral students and the Doctoral Thesis Supervisors (Supervisors) are responsible for the quality of a doctoral thesis. The project topic is also decisive for its quality.

### Art. 2 Doctoral Committee (DV Art. 4)

<sup>1</sup> The Doctoral Committee regulates doctoral matters at D-PHYS.

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<sup>1</sup>Resolution of the D-PHYS department conference of 17 December 2021 (approval of the detailed stipulations)

<sup>2</sup>SR 414.133.1

<sup>3</sup>SR 414.133.1

<sup>4</sup>RSETHZ 340.311

<sup>2</sup> The composition and meeting rules of the Doctoral Committee are described in the Rules of Procedure of D-PHYS (GO D-PHYS) of 17 December 2021<sup>5</sup>.

## **Section 2 – Admission to the doctorate**

### Art. 3 Provisional admission (cf. DV Art. 9, AB item 2.1)

<sup>1</sup> The doctoral administration office of the Academic Services carries out a formal assessment of the overall performance of the respective applicant. If this assessment proves clearly sufficient, application for admission proceeds without extended doctoral studies and without further review of the dossier.

<sup>2</sup> For applicants whose overall performance may not correspond to a Master's degree at ETH, the Doctoral Committee decides on the application for extended doctoral studies and makes a recommendation on its scope in terms of ECTS credit points. In doing so, it is actively supported by the Supervisor in the prompt decision-making process.

### Art. 4 Doctoral thesis outside the ETH domain (cf. DV Art. 25, AB item 6)

When applying for doctoral projects conducted outside of the ETH domain, the outline of the planned doctoral theses must also include information on the extent of the doctoral students' participation in teaching at D-PHYS. This information must be in accordance with the respective, applicable guidelines of D-PHYS.<sup>6</sup>

### Art. 5 Doctoral plan (cf. DV Art. 11, AB item 3)

<sup>1</sup> The doctoral students draw up a doctoral plan in electronic form in accordance with the template provided by D-PHYS.

<sup>2</sup> The doctoral students send the doctoral plan in electronic form to the members of the Aptitude Committee and the D-PHYS Doctoral Administration two weeks before the Aptitude Colloquium.

### Art. 6 Aptitude Committee (cf. DV Art. 16, AB item 4)

<sup>1</sup> As a rule, the Aptitude Committee is chaired by a member of the Doctoral Committee (see GO D-PHYS).

<sup>2</sup> An extension of the Aptitude Committee is possible at the request of the Chair to the Doctoral Committee; this application must be submitted at least six weeks before the Aptitude Colloquium.

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<sup>5</sup>RSETHZ 320.25

<sup>6</sup>Guideline "Teaching assistants at D-PHYS" approved by the Department Conference on 30.09.2022

#### Art. 7 Aptitude Colloquium (cf. DV Art. 12-15, AB item 4)

<sup>1</sup> The D-PHYS Doctoral Administration determines the Chairs and the dates for the Aptitude Colloquia on behalf of the Doctoral Committee. It provides a sufficient number of dates spread throughout the year. The doctoral students reserve a suitable date for the Aptitude Colloquium and clarify the availabilities of the members of the Aptitude Committee. They inform the D-PHYS Doctoral Administration four weeks in advance of the desired date and time of the Aptitude Colloquium. The D-PHYS Doctoral Administration subsequently invites the members of the Aptitude Committee.

<sup>2</sup> Four weeks before the Aptitude Colloquium, the doctoral applicants notify the D-PHYS Doctoral Administration of their Second Advisor (name, e-mail and business address), with the consent of the Supervisor.

<sup>3</sup> The Aptitude Colloquium is not open to the public and consists of a 20-minute presentation by the doctoral student followed by a 30-minute discussion. In addition to questions about the doctoral plan, general questions about the academic background may also be asked.

<sup>4</sup> The evaluation by the Aptitude Committee is recorded in writing and forwarded to the Doctoral Committee, the D-PHYS Doctoral Administration and the doctoral student together with their doctoral plan.

<sup>5</sup> At the request of the Supervisor or the doctoral student to the Chair, a maximum of two additional persons with a connection to the research project may attend the Aptitude Colloquium as guests in exceptional cases. It is at the discretion of the Chair whether guests may ask questions and/or attend the Aptitude Committee meeting without voting rights.

### **Section 3 – Supervision**

#### Art. 8 Supervision of the doctorate (cf. DV Art. 5, AB item 7.1)

Adjunct professors at D-PHYS are entitled to supervise doctoral theses.

#### Art. 9 Progress report (cf. DV Art. 29, AB item 9)

The doctoral students prepare the progress report based on the template provided by D-PHYS.

#### Art. 10 Confidential discussion about the doctorate process

<sup>1</sup> 1.5 to 2 years after the start of the doctorate, the doctoral student will be invited to a confidential discussion with the contact person for doctorates at D-PHYS (see GO D-PHYS).

<sup>2</sup> Doctoral students may initiate additional status conversation requests if necessary.

<sup>3</sup> The content of the discussions is confidential and can only be documented and/or passed on with the consent of the doctoral student.

## **Section 4 – Individual doctoral studies**

### Art. 11 Regular doctoral studies (cf. DV Art. 36 and 38, AB items 10.1-3)

<sup>1</sup> In the regular doctoral studies, at least 12 ECTS credit points must be acquired in accordance with AB items 10.1-3. At least 2 credit points must be earned in each of the three categories described there.

<sup>2</sup> As a rule, only credit points are awarded for work which has been performed within the university environment or at academic events. In particular, doctoral students may obtain credits from:

- a. courses in the category “Doctorate, Department of Physics” in the course catalogue VVZ;
- b. courses from the Master's and MAS programmes at ETH Zurich;
- c. courses from the Teaching Diploma in Physics at ETH Zurich or other didactic courses;
- d. courses from the “Science in Perspective” programme of D-GESS, or language courses of the Language Centre;
- e. courses from the Master's programmes in Physics and Mathematics at the University of Zurich;
- f. other courses, whereby in this case the Chair of the Doctoral Committee decides on the crediting at the request of the Supervisor;
- g. committee work, in which case a maximum of 4 credit points for committee work and chairing may be credited.

### Art. 12 Extended doctoral studies (cf. DV Art. 37)

<sup>1</sup> The extended doctoral studies comprise at least 8 ECTS credit points.

<sup>2</sup> In consultation with the doctoral student, the Supervisor determines the course work to be completed in the doctoral plan.

## **Section 5 – Doctoral thesis and doctoral examination**

### Art. 13 Declaration of personal contribution

Doctoral students must clearly declare their own achievements in all chapters of their doctoral theses. It is recommended that this declaration be summarised in a separate section. Other contributing persons or groups should be named and their contribution to the doctoral thesis should be described.

### Art. 14 Cumulative dissertations (cf. AB item 11.2)

Cumulative doctoral theses (consisting mostly of direct reproductions of already published articles) are generally not permitted at D-PHYS.

## Art. 15 Examination Committee

<sup>1</sup> As a rule, the Examination Committee is chaired by a member of the Doctoral Committee (see GO D-PHYS).

<sup>2</sup> The Doctoral Committee appoints the co-examiners. For this purpose, the doctoral students notify the D-PHYS Doctoral Administration of the co-examiners (name, email and business address) no later than ten weeks before their doctoral examination, with the consent of the Supervisor.

## Art. 16 Procedure prior to the doctoral examination

<sup>1</sup> The doctoral students must have the acquisition of the required credit points in the regular and, if applicable, extended doctoral programmes, confirmed by the D-PHYS Doctoral Administration at least 10 weeks before the doctoral examination. Any outstanding credit points must be reported before registering for the doctoral examination.

<sup>2</sup> The doctoral students find a Chair for the Examination Committee and organise a suitable examination date. The doctoral students inform the D-PHYS Doctoral Administration of the Chair, time and mode of the doctoral examination at least four weeks in advance. The D-PHYS Doctoral Administration usually organises the room and sends out the invitation to the doctoral examination.

<sup>3</sup> The doctoral students send the examination copy of their doctoral theses, usually in electronic form, to the members of the Examination Committee at least four weeks before the doctoral examination. The latter may request a printed version from the doctoral students.

<sup>4</sup> Each examiner and each co-examiner submits his or her report on the doctoral thesis electronically to the D-PHYS Doctoral Administration no later than five working days before the doctoral examination.

<sup>5</sup> The Supervisor may propose an exceptional doctoral thesis to be considered for the ETH Medal. If so, the proposal must be communicated to the D-PHYS Doctoral Administration at least four weeks before the doctoral examination. The D-PHYS Doctoral Administration organises the participation of committee members. Further procedure is governed by the GO D-PHYS.

## Art. 17 Doctoral examination and subsequent meeting of the Examination Committee (cf. DV Art. 39, 40 and 41, AB item 11.7)

<sup>1</sup> The doctoral examination consists of a presentation by the doctoral student on the doctoral thesis and a subsequent oral discussion.

- a. The presentation lasts 30 minutes and is open to the public. The Chair may allow questions from the audience.
- b. The subsequent discussion lasts at least 60 minutes and is not open to the public, subject to paragraph 2. The Chair leads the discussion.

<sup>2</sup> The following additional persons may take part in the discussion pursuant to para. 1 let. b.:

- a. the professors of D-PHYS (the Chair decides on their right to ask questions);
- b. a maximum of two additional persons with a connection to the doctorate at the request of the Supervisor to the Chair (the Chair decides on their right to ask questions);
- c. the members of the Awards Committee if this has been convened (general right to ask questions).

<sup>3</sup> At the subsequent meeting of the Examination Committee, the persons pursuant to para. 2 let. b. and c. may participate without the right to assess.

## **Section 6 – Final Provisions**

### Art. 18 Transitional provisions to the regular doctoral studies

For doctoral students who, in accordance with DV Art. 65, complete their individual doctoral studies under the previous law, the provisions set out in Appendix 1 apply.

### Art. 19 Entry into force

These detailed stipulations enter into force retroactively as of 1 January 2022. They replace the detailed stipulations of D-PHYS dated 20 December 2009 (as of 2 June 2017).

## **Application of salary levels**

The salary levels for doctoral students are applied in accordance with Article 8, paragraph 3 of the Ordinance governing scientific employees at ETH Zurich<sup>7</sup>, in conjunction with item 1, paragraph 3 of the directives for doctoral students employed at ETH Zurich<sup>8</sup>.

D-PHYS endeavours to pay doctoral students uniformly and to distribute their teaching activities equally in accordance with the respective, valid D-PHYS guidelines<sup>9</sup>. As a rule, doctoral students are classified as follows<sup>10</sup>:

- a. 1st year: salary level 2 or 3 (3 or 4 in case of parenthood)
- b. from the 2nd year: salary level 3 or 4 (4 or 5 in case of parenthood)

Exceptional workloads will be reflected in the salary rates through appropriate classifications. The Supervisor is responsible for the classification.

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<sup>7</sup>SR 172.220.113.11

<sup>8</sup>RSETHZ 622

<sup>9</sup>“Assistant Pool Agreement of D-PHYS” of 25 February 2008

<sup>10</sup>Resolution of the Professors' Conference of the D-PHYS from 12 December 2014

## **Appendix 1 – Transitional provisions for doctoral studies**

The following provisions apply to doctoral students who, in accordance with DV Art. 65, complete their regular doctoral studies under the previous regulations (in accordance with the detailed stipulations of D-PHYS for the individual doctoral studies in physics dated 20 December 2009 (as of 2 June 2017):

### **1.1 Introduction**

These transitional provisions regulate the acquisition of credit points (CP) in regular doctoral studies according to the previous regulations.

Evidence of at least 12 CP is required, of which 8 CP can be acquired within and a minimum of 4 CP must be acquired outside the research area of the doctoral thesis. The D-PHYS Doctoral Administration or the Chair of the Doctoral Committee certify the acquired CP upon application for the doctoral examination.

### **1.2 Creditable courses**

Doctoral students in physics may take the following courses:

- a. All courses from the Master's Programme in Physics (including the additional training for the teaching qualification in Physics) which are listed in the course catalogue;
- b. All courses from the Master's programmes in Mathematics and Computational Sciences;
- c. Courses from the Master's and MAS programmes at ETH Zurich;
- d. D-GESS “Science in Perspective” lectures;
- e. Lectures from the Master's programmes in Physics and Mathematics at the University of Zurich;
- f. Other suitable courses may also be taken after consultation with the Supervisor and the Chair of the Doctoral Committee.

### **1.3 Awarding of Credit Points**

One CP corresponds to a study effort of 25-30 working hours. The awarding of CP is linked to a verifiable personal achievement in accordance with AB items 10.1-3. Qualification exams cannot be credited as CP for the regular doctoral studies.

The fulfilment of the personal achievement in courses according to Appendix 1.2 is to be verified and certified by the responsible lecturer. The doctoral student enrolls for the selected lectures at ETH Zurich via the “myStudies” portal. The lecturers usually confirm the students’ personal achievement in courses via “eDoz”, and the doctoral students can view this confirmation in “myStudies”. To award CP, D-PHYS considers regular participation in the course together with the completion of exercises and, if required, the presentation of learning content, participation in discussions, as well as, in case of external courses, summer schools



and conferences, an oral or written report to Supervisor, and possibly the group, as sufficient personal achievement.

It must be ensured that the 8 CP from the subject area of the doctoral thesis come from at least two courses – regardless of whether the purely numerical minimum of 8 CP has already been achieved with one course. Furthermore, a maximum of 8 CP can be awarded for the additional training for the teaching qualification in Physics.

Other personal achievements in accordance with AB items 10.1-3 are verified and confirmed by the Supervisor (1 CP corresponds to an effort of 25-30 working hours). The Supervisor certifies the personal achievement on the course confirmation form for doctoral students.

Credit points are usually awarded as follows:

- a. Courses according to Appendix 1.2 with regular performance record: ECTS points according to the course catalogue;
- b. Courses according to Appendix 1.2 with a performance record other than an examination: 1 CP per hour per week of the lecture and exercises (V+U), up to a maximum of ECTS points according to the course catalogue<sup>11</sup>;
- c. Project studies (special, smaller work outside the research area of the doctoral thesis after consultation with the Supervisor): 1 CP;
- d. Participation in events such as a summer school, lecture or poster at workshops and conferences (1-3 weeks duration): 1-4 CP;
- e. In addition, participation in didactic training courses offered by D-PHYS: 1-4 CP;
- f. Other personal achievements upon individual agreement: e.g. further education courses in Computer Sciences, language courses, courses on experimental and theoretical methods, etc., participation in university or expert committees (at the suggestion of the Supervisor and with the consent of the Chair of the Doctoral Committee).

The Supervisor decides on the delimitation of the minimum of 4 CP that are to be acquired by the doctoral students outside of the research area of their doctoral thesis. In case of disagreement between the doctoral student and the Supervisor, the Chair of the Doctoral Committee makes the final decision.

The CP that can be credited to the doctoral studies do not have to be identical to the ECTS credit points in the course catalogue.

## **1.4 Exceptions**

The Doctoral Committee decides on exceptions to these transitional provisions.

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<sup>11</sup> Added by resolution of the doctoral committee on 9 June 2021, in force since 10 June 2021