

### Guidelines of the Department of Physics and Astronomy for the submission of cumulative theses:

Instead of a conventional thesis, cumulative theses can be permitted (see Appendix 2, to §7 (2) Regulations concerning the conferral of doctoral degrees / *Promotionsordnung*) if suggested by the primary advisor, i.e. the thesis can be submitted in the form of a series of publications and texts summarizing the work. **The following rules apply:**

1. The candidate must have at least three publications in German or English. The following publications can be considered: contributions in internationally acclaimed peer-reviewed journals and publication series (main articles; no research notes or reviews). The contributions must already be published or proven to be accepted for publication.
2. In the thesis, the publications must be preceded by an abstract (see §7 Regulations concerning the conferral of doctoral degrees / *Promotionsordnung*) and a **detailed comprehensive introduction**. This includes a conceptual framework and a presentation of the research program from a methodological view. If applicable, connections and transitions are to be made between the publications. The thesis must end with a reflection, discussion, and summary. The comprehensive introduction and the coherent overall discussion are of special importance for cumulative theses. Thus the contribution of the manuscripts as a whole to the expansion of scientific knowledge in the subject area of the thesis should be demonstrated conclusively.
3. The **scientific work** for the publications summarized for the thesis must have been predominantly performed by the doctoral student. He/she must be the sole or the principal author of at least two of the submitted publications (typically first author or otherwise identified as principal author through initial placing on the authors' list. In case of doubt, a statement by all authors confirming the principal authorship is required). For all joint publications, a statement by the doctoral student describing his/her contribution must be included.
4. For the **review**, the same rules as for conventional theses apply (see §9 Regulations concerning the conferral of doctoral degrees / *Promotionsordnung*). The referees assess the complete work; they are not bound in any way by the publication or the acceptance for publication. Notably they have to evaluate whether the principal authorship is plausible or not.
5. The two publications of which the doctoral student is the principal author cannot be used for any other dissertation (in the past or in the future).
6. A cumulative thesis has to be submitted in a bound form as well as electronically, in a DIN A4 format, and consists of the following:
  - cover page
  - abstract (in German and English, max. 200 words each)
  - table of contents
  - introduction
  - manuscripts
  - discussion (5-10 pages)
  - summary
  - bibliography for the citations of the introduction and the discussion
  - as an attachment, possibly further original data or methods not documented in the manuscripts.