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Call for Proposals
"Isolated quantum systems under extreme conditions"
(October 2013)

The Heidelberg Center for Quantum Dynamics (CQD) invites proposals for scientific projects at the borderline between simple, few-body and complex, many-body quantum systems with special emphasis on dynamical processes and/or non-stationary phenomena. The proposals should ideally mark the start of high-risk, high gain projects and initiate or intensify collaborations between members of the CQD.

This Call for Proposals is focused on the preparation of an DFG Sonderforschungsbereich SFB (Collaborative Research Center) on the topic "Isolated quantum systems under extreme conditions":

Strongly-correlated quantum dynamics of isolated systems poses some of the most outstanding problems with relevance for a wide range of physical phenomena at vastly different energy scales. Their understanding is crucial for ultra-relativistic heavy-ion collision experiments at the Large Hadron Collider or the early universe as well as for experiments with ultracold atoms. The latter can precisely realize important aspects of the dynamics of isolated systems which are otherwise very difficult to access experimentally. In recent years, it turned out that important dynamical properties are universal and, despite vast differences in scales, one can indeed learn from table-top experiments something about the dynamics during the very early stages of our universe.

In order to support as many projects as possible, the total budget should not exceed 25.000 €.

Proposals should contain the the names and affiliations of the project partners, the central idea of the project, the research methods, the requested budget and a statement on the connection to the above topic of the planned SFB. Please do not exceed two A4 pages.

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The proposals will be ranked by the Executive Board of the CQD, supplemented by the prospective speaker of the SFB J. Berges. Criteria in the evaluation are originality, suitability to the planned SFB, reference to the scientific directions of the CQD and the collaborative character of the project.

Proposals should be sent as electronic files in PDF format to sekretariat-weidemueller@physi.uni-heidelberg.de. For further information please contact Matthias Weidemüller (Tel.: 54-19470).

Deadline for submissions is **31 October 2013**.

Center for
Quantum Dynamics