**2018 Helmholtz – OCPC – Program**

**for the involvement of postdocs in bilateral collaboration projects**

**DESY\_OCPC\_2018-05**

**PART A**

**Title of the project: Development of computational approach for simulations of nuclear motion dynamics of weakly bound clusters**

**Helmholtz Centre and Research Group: DESY, CFEL Controlled Molecule Imaging**

**Project leader: Dr. Andrey Yachmenev, Prof. Jochen Küpper**

**Web-address:** http://controlled-molecule-imaging.org

**Description of the project:**

In this project we continue to develop our general variational approach to describe nuclear motion dynamics in the presence of external electromagnetic fields. Clever implementation of novel machine-learning techniques is essential to advance the theoretical approaches towards more complex molecular systems, with lots of floppy internal degrees of freedom. Algorithms developed and implemented in this project will be used extensively in calculations of the intermolecular dynamics of small and medium size water clusters and complexes of small organic molecules with water.

**Description of existing or sought Chinese collaboration partner institute:**

**Required qualification of the post-doc:**

* Excellent PhD in physics, theoretical chemistry, applied mathematics or computer science, or a related field
* Knowledge of quantum mechanical approaches in chemistry and spectroscopy is essential
* Extensive experience with programming languages, such as Python, C, C++, Fortran is highly desirable.
* Fluent in written and spoken English

**PART B**

**Documents to be provided by the post-doc, necessary for an application to OCPC via a postdoc-station:**

* + Detailed description of the interest in joining the project (motivation letter)
  + Curriculum vitae, copies of degrees
  + List of publications
  + 2 letters of recommendation
  + Proof of command of English language

**PART C**

**Additional requirements to be fulfilled by the post-doc:**

* Max. age of 35 years
* PhD degree not older than 5 years
* Very good command of the English language
* Strong ability to work independently and in a team