



**of the European Community for research, technological development and demonstration activities (2007-2013)**

## **Collaborative Project & Coordination and Support Action**

### ***HadronPhysics3***

Project title: **HadronPhysics3 – Study of Strongly Interacting Matter**

Project number: **283286**

Project coordinator: **Istituto Nazionale di Fisica Nucleare INFN, Frascati, Italy**

Project homepage: <http://www.hadronphysics3.eu/>

HZDR participant: **Institute of Radiation Physics**

Starting date: **01.01.2012**

Duration (months): **36**

### **Summary**

The project promotes the access to five European infrastructures, and it is structured into nine Networking Activities, plus the management of the consortium, and fourteen Joint Research Activities. The project will profit of the success of the previous HadronPhysics project in FP6 and the current HadronPhysics2 in FP7, and originates from the initiative of more than 2,500 European scientists working in the field of hadron physics.

Hadron physics deals with the study of strongly interacting particles, the hadrons. Hadrons are composed of quarks and gluons. Their interaction is described by Quantum Chromo Dynamics, the theory of the strong force. Hadrons form more complex systems, in particular atomic. Under extreme conditions of pressure and temperature, hadrons may loose their identity and dissolve into a new state of matter similar to the primordial matter of the early Universe.

The Networking Activities are related to the organization of experimental and theoretical collaborative work concerning both ongoing activities at present research infrastructures and planned experiments at future facilities. In hadron physics the close interaction between experimentalists and theoreticians is of paramount importance.

The Joint Research Activities concentrate on technological innovations for present and future experiments. Applications in material science, medicine, information, technology, etc., represent natural fall-outs. The main objective of this Integrating Activity is to optimize the use and development of the research infrastructures existing in Europe working in the field of hadron physics.

The project aims as well at structuring, on European scale, the way research infrastructures operate, and at fostering their joint development in terms of capacity and performance. The approach used is the “bottom up” approach, to respond to the needs of the scientific community in all fields of science and technology.