

Evaluation Summary Report for a Marie-Curie Research Training Network

Proposal No. : 005430	Acronym : HardQCD@LHC	Panel: PHY-1-2
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<p>1. Scientific Quality of the Research Training Area (Threshold 3/5)</p> <p>This is a purely theoretical project, but the potential results will bear upon the significance of experimental results from the biggest European endeavour in high energy physics in the coming years - the start of the LHC accelerator in 2007. An important link with experimental experts is foreseen, via incorporation of the LHC experiments Atlas and CMS representatives into a management board of the network. Some of the ER's involved in the proposed network already participate in large experimental collaborations. It is not a 'novelty - break-through' type of project, but an attempt at pushing the limits of both signal and background accuracy to new, hitherto unavailable limits. The proposed research method is certainly appropriate, with a very well defined structure of tasks. The project does involve an intersectorial approach, as it combines the efforts - and training - in different theoretical techniques: analytical and numerical (with new event generators, in object-oriented language).</p>	<p>Mark: 4.3</p>
<p>2. Quality of the Training Activities (Threshold 4/5)</p> <p>The training programme is well integrated into the research programme, which is reflected by in the good balance between ESR and ER. Research training sessions, foreseen in the first year, should ensure a good collaboration between younger and more experienced participants, and enable participants to fully integrate into the vast proposed exchange programme. This goal will also be served by topical workshops and meetings. The planned training and transfer of knowledge activities are destined to overcome the fragmentation of research expertise between different network nodes.</p>	<p>Mark: 4.5</p>
<p>3. Quality/Capacity of the Host (No Threshold)</p> <p>The collective expertise of the research teams is quite ample, as witnessed by the scientific standing of their leaders, the publication record, and ongoing collaborations in the field. The establishing of this network should greatly intensify the exchange of researchers and overcome the boundaries between different specialized groups. Of particular importance is the perspective of increasing the contacts between experimentalists and theoreticians, which should result from the proposed inclusion of members of experimental groups into the network management board. All groups possess a necessary infrastructure.</p>	<p>Mark: 4.3</p>
<p>4. Management and Feasibility (Threshold 3/5)</p> <p>The clearness and the precision (in numbers) with which the proposal has been written illustrate the management potential of the various partners of the network and especially that of the co-ordinator. However, a concern is the feasibility of the project and on the fact that the scientific objectives could be reached with an ESR/ER ratio of approx. 2. Combining Switzerland, Germany and Hungary into one node (5 sub nodes) is not effective or advisable.</p>	<p>Mark: 4.1</p>
<p>5. Relevance to the objectives of the Activity (No Threshold)</p> <p>This network appears to be almost a necessity for the full exploration of one of the most important projects of European high energy physics - the LHC. Scientifically - it should provide the basis for the assessment of potential discoveries. Equally important will be an integration of European researchers in this front-line domain, with a perspective for long-term international collaborations, contributing also to a reduction of brain drain of European basic research specialists.</p>	<p>Mark: 4</p>
<p>6. Added Value to the Community (No Threshold)</p> <p>The project fits well into a policy of European integration, as it involves, among others, teams from Associated State and from Less Favoured Regions. It would certainly increase the attractiveness of Europe for top class researchers, and should help create long term collaborations. In what concerns the gender aspect, only a few women participate to this network. However a woman has been appointed as the Human Resource Coordinator and she will assure that women researchers receive a "careful consideration". An other modest goal is stated, which is going from no women in permanent scientific staff positions in this area in Europe to achieving the level of 20%. However, no mechanism or plan is described for achieving this.</p>	<p>Mark: 3.9</p>
<p>Overall remarks (Threshold 70%)</p> <p>This proposal is a strong, narrowly focused project, aimed at developing detailed predictions for near future experiments from QCD. The goals of the project have high priority, in that the proposed work is necessary for analysis of the data from LHC and other future experiments. The work is based on a theory-QCD-that by now is well studied and tested, many predictions of which have been confirmed. Moreover, the project has a component which concerns physics beyond the standard model. Equal attention is given to supersymmetric and non-supersymmetric BSM theories. Also important is the goal of combining QCD and BSM calculations, in order to have estimates of QCD effects sufficiently accurate to give a</p>	<p>Total score: 4.19 (83.8 %)</p>

reliable signal of BSM physics. The main objectives are to provide real bread-and-butter calculations for applications in a real experiment, thus to ensure that detector signals and so-called "backgrounds" are correctly simulated and integrated into a detailed analysis of the experiment.

Has the proposal passed all evaluation thresholds?

NO

YES