



## Preface

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The “Resonance Workshop at Catania” was held during 3-7 November 2014 at the Hotel “Il Principe” in the baroque old town centre of Catania (Italy). As the first “Resonance Workshop” organized at UT Austin, it was devoted to discuss the topics of hadronic resonance production in elementary and heavy-ion collisions, covering a large range of collision energies. Reviews of the recent results obtained from the main experiments at COSY, ELSA, MAMI, SIS, JLab, RHIC and LHC were presented. In particular, experimental results and theoretical predictions on the production of mesonic and baryonic resonances containing u, d, s, and c quarks were discussed. Exotic configurations (tetra-, penta-quarks) were also addressed. Theoretical approaches which estimate resonance yields and spectra, their spectral modification in a hot and dense medium were reviewed. For heavy-ion collisions, medium effects which should modify resonance characteristics, the dileptonic and hadronic decay channels and their consistency were discussed. One of the main questions is whether the experimental results fit into a consistent picture with the signatures of the chiral symmetry restoration in a medium near a transition from partonic matter evolving into hadronic matter. The workshop consisted of 38 invited talks and two meetings on the following subjects: 1) Resonances in heavy-ion collisions: mi-

crossopic and hadronization models, 2) Production of exotic resonances with strangeness and charm: molecular and many-quark states and how we can distinguish them.

The workshop was a great success, gaining a better understanding of the experimental results at different colliding energies, of the pros and cons of the theoretical models and in general as it is challenging to extract a signature of a modified medium. The full program, including all the presentations, is available online at the workshop website [www.ct.infn.it/rsnct2014](http://www.ct.infn.it/rsnct2014). We would like to thank everyone contributing to the success of this workshop. It was particularly interesting and fruitful thanks to the open and critical discussions of all participants, always keeping a relaxed and friendly atmosphere. We are grateful to our sponsors: INFN-Sezione di Catania, Catania (Italy); Helmholtz International Center for FAIR c/o FIAS, Frankfurt (Germany); University of Texas at Austin, Texas (USA). A special thank you goes to Miss Elena Atalmi, who designed and realised an impressive conference poster for us. Last but not least we would remember the precious work of our Catania colleagues Angela Badalà, Paola La Rocca and Catia Petta for the organization of the whole workshop and in particular of the social events.

# Resonance

## workshop at Catania

3-7 November 2014

*hadronic  
strange and charm  
resonance production  
in heavy ion  
and elementary  
collisions*

### *Scientific committee*

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Angela Badalà (INFN Catania)  
Marcus Bleicher (Frankfurt Univ. & FIAS)  
Laura Fabbietti (T. University Munich)  
Vincenzo Greco (INFN LNS)  
Christina Markert (UT Austin)  
Hendrik van Hees (FIAS)

### *Local committee*

Angela Badalà  
Paola La Rocca  
Catia Petta

[www.ct.infn.it/rsnct2014](http://www.ct.infn.it/rsnct2014)

artwork by Elena Atalmi



