

PREFACE

The intention of the International Workshop on "*Acoustic and Radio EeV Neutrino detection Activities*" – ARENA 2005 was to display the current efforts towards the detection of neutrinos of highest energies looking for their emission of radio or acoustic signals in dense-matter interactions.

Believing in the benefit of a combination of both techniques, we announced the workshop with an emphasis on possibilities of collaboration and joint activities, following the tradition of previous meetings in Los Angeles and Stanford.

More than 40 years ago Gurgen A. Askar'yan was the first one who proposed the detection of high energy neutrinos by acoustic signals of thermo-elastic origin due to the energy deposit in a dense medium and by coherent radio Cherenkov radiation from the charge excess in a dense particle shower.

In connection with the DUMAND project first experimental checks of the Thermo-Acoustic Model were performed at the end of the 70's of last century, confirming many of its predictions using high intense proton beams from accelerators. Confirmation of the radio-Cherenkov effect came only a few years ago from dumping an intense photon beam in silica sand.

Nevertheless several radio detection experiments started already in the 90's and in the meantime limits could set to cosmic neutrino fluxes. The acoustic technique had a big revival during the last years but is still in a research- and development-phase. A first flux limit from an acoustic array was published last spring. Also ideas about the direct production of radio signals by air showers in the atmosphere got new theoretical and experimental interest recently. So, it was time to try to get a common view to the different fields.

ARENA 2005 brought together ~90 scientists from 10 countries representing nearly all presently known theoretical and experimental research activities for radio and acoustic particle detection. Three days were filled with interesting talks and fruitful discussions about the status and the future of the topics. Finally, in a round table discussion the chances for closer cooperation between different groups were disputed.

The present volume contains most of the workshop contributions. Unfortunately we were not able to collect all of them in the given time frame. However, the slides of all talks can be found at <http://www-zeuthen.desy.de/arena>. We want to thank all of our colleagues who made ARENA 2005 a success.

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