Special Issue

Advances in Neutrino Detectors

Message from the Guest Editor

Since the discovery of neutrino oscillations in 1998, the study of neutrinos has become, alongside the high energy frontier at the *Large Hadron Collider* (LHC), and the search for particle dark matter, one of the three pillars of experimental particle physics. The low-hanging fruit of the three neutrino PMNS mixing matrix has, by now, all been harvested. To varying precisions, we know the values of the three mixing angles and two mass-squared difference scales, but subtler points remain unknown. These include many with profound implications, such as CP violation in neutrino mixing, the absolute neutrino mass scale, the nature of neutrino antimatter, and the number of neutrino flavors. Future progress in neutrino physics is dependent on continued innovation in detector technology, which is why we believe that now is a good time to take stock of our technologies: what is the current state-of-the-art, and where are we going? Do we have the technology we need to address these big questions, or is further innovation required?

Guest Editor

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The realization of dedicated instrumentation has always been a collateral aspect of experimental research. In addition, many groups dedicate efforts and resources solely to the development of new devices, sensors, equipment and large infrastructure, theoretical and numerical studies, and novel experimental methodologies. With *Instruments* we wish to address both established and emerging communities, also to favor the creation of innovative trans-disciplinary approaches. We see *Instruments* as an exciting high-impact journal that will soon hold a leading position in disseminating cutting edge scientific and technological research.

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