

Cosmic Muon Veto for the INO's mini-ICAL detector

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A 51-kt magnetised Iron Calorimeter (ICAL), using Resistive Plate Chambers, is the flagship experiment at the India based Neutrino Observatory (INO). A prototype - 1/600 of the weight of ICAL, called mini-ICAL was installed in the INO transit campus at Madurai. A cosmic muon veto around the mini-ICAL is now being planned. The veto walls will be built using three staggered layers of extruded scintillator strips. WLS fibres of 1.4mm in dia are inserted into two extruded holes along the length of the strip to collect the light signal. Hamamatsu SiPM's of 2mm×2mm active area collect the light on both ends of the fibres. On veto trigger, the DAQ system will gather the charge, arrival time and position of muon tracks in the scintillator strips. But the data collected is transferred to the backend only if the trigger from mini-ICAL is also received in time. Details of the design and construction of the detector including the electronics, trigger and DAQ systems planned will be presented.

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No, this is an entirely new submission.

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Primary author: Dr BHEESETTE, Satyanarayana (Tata Institute of Fundamental Research, INDIA)

Co-authors: Mr BHARATHI, S.R. (Tata Institute of Fundamental Research, INDIA); Mr CHINNAPPAN, Pandi (Tata Institute of Fundamental Research, INDIA); Prof. DATAR, Vivek (Tata Institute of Fundamental Research, INDIA); Ms JANGRA, Mamta (Tata Institute of Fundamental Research, INDIA & Homi Bhabha National Institute, INDIA); Mr JOHN, Jim (Tata Institute of Fundamental Research, INDIA & Homi Bhabha National Institute, INDIA); Mr JOSHI, S.R. (Tata Institute of Fundamental Research, INDIA); Mr KARTHIKK, K.S. (Tata Institute of Fundamental Research, INDIA); Mr L, Umesh (Tata Institute of Fundamental Research, INDIA & The American College, INDIA); Prof. MAJUMDER, Gobinda (Tata Institute of Fundamental Research, INDIA); Dr PANCHAL, Neha (Tata Institute of Fundamental Research, INDIA); Mr PANYAM, Nagaraj (Tata Institute of Fundamental Research, INDIA); Dr PETHURAJ, S (Tata Institute of Fundamental Research, INDIA); Mr PONRAJ, Jayakumar (Tata Institute of Fundamental Research, INDIA); Mr RAVINDRAN, K.C. (Tata Institute of Fundamental Research, INDIA); Dr RUBINOV, Paul (Fermilab, USA); Ms SACHDEVA, Mahima (Tata Institute of Fundamental Research, INDIA); Mr SARAF, Mandar (Tata Institute of Fundamental Research, INDIA); Mr SHARMA, Kirti Prakash (Tata Institute of Fundamental Research, INDIA); Mr SHINDE, R.R. (Tata Institute of Fundamental Research, INDIA); Mr SOGARWAL, Hariom (Tata Institute of Fundamental Research, INDIA & Homi Bhabha National Institute, INDIA); Mr UPADHYA, S.S (Tata Institute of Fundamental Research, INDIA); Mr VERMA, Piyush (Tata Institute of Fundamental Research, INDIA); Mr YUVRAJ, E (Tata Institute of Fundamental Research, INDIA)

Presenter: Dr BHEESETTE, Satyanarayana (Tata Institute of Fundamental Research, INDIA)

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