

**XVIII Workshop on Neutrino Telescopes  
Palazzo Franchetti – Istituto Veneto  
Venice, 18-22 March 2019**

**Poster Session  
Submission of Abstract**

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Title of the Poster: Supernova Relic Neutrinos: the hard way to detection at Super-Kamiokande

Abstract Text: (no longer than 800 characters)

Supernova Relic Neutrinos (SRN) are a cosmic diffused background of neutrinos emitted by all the past supernovae, whose observation will increase our knowledge about the history of the universe and nucleosynthesis.

The water-Cherenkov detector Super-Kamiokande, Japan, is going to be loaded with Gadolinium, whose delayed de-excitation gammas from neutron-capture will complete the signature initiated by the prompt positron signal in an inverse beta decay. The neutrino-oxygen neutral current quasi-elastic interactions, mimicking the prompt+delayed signal pattern, are an irreducible background. Knowing the cross-section of such process, measured by the T2K experiment (Japan), and of secondary gamma production, a background process recently studied at RCNP Osaka, will help in the SRN search.

Summary: (no longer than 400 characters. Insert a tag, key word, topic, etc.)

Following key-words summarize the poster content:

Supernova Relic Neutrinos

Gadolinium-loaded Super-Kamiokande

Neutral current quasi-elastic interactions

T2K

Secondary gamma

RCNP Osaka

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Kindly follow the instructions above and send the abstract (.pdf file) to <mailto:salente@pd.infn.it> by February 22nd 2019. Response will be sent to the submitter's e-mail address indicated above, by March 1<sup>st</sup>.

Posters will be exhibited all week long at the workshop site. Discussion will take place on Thursday March 21st, during the Poster Party. At least one author must be available for "question-answer" time.

Best 3 posters will be awarded on Friday 22nd, during the closing plenary session of the workshop.