

## Poster Session Submission of Abstract

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**Title of the Poster:** *Supernova Neutrinos with NEWSdm detector*

### Abstract

The explosion of a Supernova, due to the collapse of a star at the end of its life, is one of the most energetic phenomenon observable in the Universe.

Although the observation of these events are very uncommon to achieve, the new generation of ton-scale detectors for dark matter search are sensitive to neutrinos coming for supernovae which can also represent a serious and unremoveable background source.

A directional detector like NEWSdm may provide the unique capability to observe neutral current interactions of neutrinos originated by a supernova explosion.

NEWSdm is a nuclear emulsion detector made of 40 nm crystals of silver bromide which make the reconstruction of trajectories with path lengths down to 50 nm possible if analyzed by means of microscopes with enough resolution.

### Summary

Neutrinos coming from supernovae are largely investigated since they could directly explain the underlying processes inside a star which led to the the supernova explosion.

NEWSdm experiment proposes an innovative approach to search for dark matter using a new generation of nuclear emulsions called Nano Imaging Trackers.

A ton-scale detector would be able to detect supernova neutrino events too.

**Tag:** Supernova Neutrinos - Directional Dark Matter Detector - Nuclear Emulsion