# Response of an underwater Cherenkov detector to Supernova Neutrinos

E. Amato, L. Auditore, R.C. Barna', V. D'Amico, D. De Pasquale, A. Italiano, A. Trifiró, M. Trimarchi for **NEMO Collaboration**

The goal of the presented work is to study the response of future deep-underwater high-energy neutrinos Cherenkov detectors to low-energy neutrinos coming from a Supernova event.

Those detectors are in phase of development from various years, and some prototypes are already operating.

The explosion of a Supernova is an unexpected event that would carry very important information about stellar structure and its dynamics. It would be of outmost interest to observe from the very beginning, and in all emitted radiation fields, such an event that would happen in our Galaxy.

The future neutrino telescopes can give a great contribution in that sense, observing a radiation that would preceed few hours the optical burst, that would be announced.

To optimize the response of those detectors to Supernova signal is necessary to predict in the most possible way the processes that can lead to such a detection.

The results presented are encouraging, and lead to the conclusion that the future neutrino telescopes can detect a Supernova exploding in our Galaxy.