

# Combined KamLAND and Super-Kamiokande Presupernova Alarm

*Friday, 21 June 2024 17:30 (2 hours)*

Pre-supernova (preSN) neutrinos are emitted by massive stars in the hours leading up to their core collapse. The detection of preSN neutrinos may provide insight into the evolution of massive stars and the processes culminating in their core collapse, as well as address open questions about neutrinos such as the mass hierarchy. Additionally it may provide early warnings for nearby supernovae, which is why the Kamioka Liquid Scintillator Antineutrino Detector (KamLAND) and the Super-Kamiokande (SuperK) have launched pre-supernova alarms in 2015 and 2021, respectively. SuperK and KamLAND have recently developed a combined alert system in order to improve their sensitivities to preSN neutrinos and to extend the expected warning times. We present the details of the combined alarm along with the expected increase in sensitivity.

## Second affiliation

### Gender

Male

### Collaboration (if any)

Super-Kamiokande Collaboration

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### Poster prize

Yes

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