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Impact of neutrino pair-production rates in Core-Collapse Supernovae AURORE BETRANHANDY, Stockholm Univ — Neutrinos are the main vector of energy transport in the revival process of a stalled supernova shock through the neutrino-driven mechanism. The treatment of their interactions with the medium is therefore an important part of our simulations. Some of these interactions are the pair processes, nucleon-nucleon bremsstrahlung and electron-positron annihilation, which will create or annihilate a neutrino/anti-neutrino pair. In this talk, I will present the results of our latest paper on the impact of pair process treatments in the GR1D supernova evolution code. I will talk about simulations from two different progenitors, one of which producing a successful explosion. These simulations showed that the way of treating nucleon-nucleon bremsstrahlung and electron-positron annihilation has a significant impact on the shock evolution as well as on the neutrino luminosities.

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