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Neutrinos from SN1987A: temperature models for two neutrinos'bursts

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The neutrinos'burst from SN1987A were detected on different experiments around the World on February in 1987 until today it is theme of discussions and re-analysis. All events were approximately twenty five in the following detectors: Kamiokande II (KII) in Japan ˜ 12, Irvine-Michigan-Brookhaven (IMB) in USA˜8 and Baksan in Soviet Union ˜ 5. The neutrinos play a key role on cooling mechanism into Neutron Star (NS) remnant, ˜ 99% energy of collapse was lost with neutrinos emission in the first few seconds and it is possible "to see"the inner structure of NS in the initial instants after newborn NS. This work proposes to analyze two temperature models that presuppose two neutrinos'bursts with temporal interval ˜ 5s between them. The main motivation is: the dataset shows two distinct groups of neutrinos where the second group would come from Strange Quark Matter scenario. We used Bayesian Information Criterion (BIC) to select the best model with two temperatures.

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