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The Most Promising High Energy Neutrino Source

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Nature can apparently produce high energy (HE) particle budgets of 10^{50} erg/s, lasting tens of seconds, during stellar collapse. Such events account for gamma ray bursts (GRB). However, at typical cosmological distances, GRB would be hard to detect in neutrinos. It is suggested here (as in Eichler and Levinson, 1999) that nearby ($D < 1$ Gpc) GRB, the vast majority of which are unobservable to us, could nevertheless send HE neutrinos in our direction. These would be the brightest HE neutrino bursts. They could coincide with gravitational wave signals but not necessarily with GRB.

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Classification de Session: More on the emission processes of GW and HEN