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Slim Ibrahim* (ibrahim@math.uvic.ca), Department of Mathematics and Statistics, Victoria, BC V8W3R4, Canada, **Nader Masmoudi**, New York, NY , and **Kenji Nakanishi**, Kyoto, Japan. *Sharp scattering and blow up regimes for focusing nonlinear Klein-Gordon equation.*

We consider a semilinear Klein-Gordon equation with a focusing and at most energy critical nonlinearity. Below the energy of the ground state, we show that the energy space can be split into two complements sets leading to two opposite dynamics: the finite time blow up in one side and the global existence and scattering in the other side. This result rely on various characterizations of the ground state, and on the use of a compactness argument for the scattering. (Received March 03, 2009)