**Binary neutron star initial data and single, rotating neutron stars as gravitational wave emitters** ANTONIOS TSOKAROS, University of Illinois at Urbana-Champaign, KOJI URYU, University of the Ryukyus, Okinawa, Japan, LUCA BAIOTTI, Osaka University, Toyonaka, Japan, FILIPPO GALEAZZI, BRUNO MUNDIM, LUCIANO REZZOLLA, Institute for Theoretical Physics, Frankfurt am Main, Germany, NORIYUKI SUGIYAMA, University of Wisconsin-Milwaukee, KEISUKE TANIGUCHI, University of the Ryukyus, Okinawa, Japan, SHIN'ICHIROU YOSHIDA, The University of Tokyo, Tokyo, Japan — In the first part of this talk, we compare gravitational waveforms for the same irrotational binary configuration computed with two different initial-data codes, but evolved with the same evolution code. The impact of the difference on the estimation of physical parameters will be addressed. In the second part we present quasiequilibrium solutions of triaxially deformed rotating compact stars (generalization of Jacobi ellipsoids under relativistic gravity and compressible equations of state). We show that supramassive equilibrium solutions exist and a new scenario to probe the EOS of high density nuclear matter through gravitational wave detection will be discussed.

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