Nuclear symmetry energy in compact star matter

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We discuss the effect of nuclear symmetry energy for the equation of state of compact star matter in relation to the strangeness degree of freedom. The symmetry energy for neutron-rich matter is discussed in the frame work of skyrmion crystal as well as incorporating the scaling properties of hadrons on the tensor force in matter. Exploiting the topological structure of skyrmion-to-half-skyrmion transitions on crystals, we also discuss novel predictions on a variety of processes involving hadrons in cold dense matter.