TESI DISPONIBILI PRESSO IL GRUPPO DI TEORIA DEI SISTEMI A MOLTICORPI

§ **electron and neutrino scattering on nuclei**

- scaling in momentum transfer, in the Fermi momentum and superscaling (the same for nuclei)

- transition from nuclear scaling to the Biorken scaling

- violation of scaling computed with effective Lagrangian (nucleons, pions and delta isobar)

§ **pairing hamiltonian as a model of superconductivity**

- solution of Richardson equations

- path integral approach to the derivation of the Arima-Iachello model

- how small can be a superconductor

§ **finite temperature field theory**

- mean field at finite temperature, symmetry breaking and Goldstone modes in different phases (anomalous propagators)

- the problem of dense nuclear/hadronic matter at finite temperature and the connection with quark deconfinement

§ **the strange content of the nucleon**

- **weak neutral currents coupled to the nucleon current: the scattering of neutrino on nuclei**

§ **quantum chaos**

- **Feshbach averaging procedure versus random matrices**

- **application to the nuclear mass systematics**

Corsi fortemente consigliati:

- **Teoria della struttura nucleare**
- **Teoria dei campi dei sistemi complessi I e II**