

**Hauptvortrag** PV XXII Fr 10:00 RW 1  
**Strangeness in Hadrons** — ●CONCETTINA SFIENTI — Johannes Gutenberg-Universität Mainz

The challenges of nuclear science have nowadays broadened and extends from fundamental particles - quarks and gluons - to the most spectacular of cosmic events like supernova explosions. At the energies characteristic for nuclear binding the strength and complexity of QCD complicate the understanding of the nuclear phenomena in terms of fundamental degrees of freedom.

The properties of baryon many-body systems, which contain not only nucleons but also hyperons with strangeness, link closely to the underlying hyperon-nucleon interaction. The hyperon offers a selective

probe of the hadronic many-body problem as it is not restricted by the Pauli principle. As the study of any complex system, the inclusion of an impurity and the study of its subsequent propagation provides us with a way to reveal configurations or states that can not be reached other ways.

The physics of strangeness in hadronic systems is a constantly developing field with a large variety of production reactions, making use of precision coincidence measurements. It brings up new, often unexpected, results, new challenges and open questions. High precision studies of light Lambda hypernuclei, spectroscopy of double lambda-lambda nuclei are examples of the outstanding challenges for hypernuclei research in the next decade.