Contribution ID: **62** Type: **Invited**

Staying in shape after 35: COLLAPS's recent results and perspectives

Thursday, 6 December 2018 14:00 (30 minutes)

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Since the 1980s, high-resolution laser spectroscopy has been used at COLLAPS to study the structure, size and shape of radioactive nuclei [1,2]. By probing the atomic hyperfine structure and isotope shifts, nuclear moments and mean-square charge radii can be extracted and nuclear spins can unambiguously be determined. These fundamental properties provide key insights in the nuclear structure far from stability and its evolution along an isotopic chain, as will be illustrated by some recent COLLAPS'highlights in the Ni (Z = 28) and Sn (Z = 50) regions. Additionally, the relevance of this (almost) 40-year-old technique beyond LS2 will be discussed.

[1] R Neugart, 1981, Nucl. Instrum. Methods Phys. Res. 186 165
[2] R Neugart et al, 2017, J. Phys. G: Nucl. Part. Phys. 44 064002

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Session Classification: Low Energy Physics 1