25 Years of Nuclear Resonant Scattering at ESRF-APS-Spring-8 and PETRA-III
What did we learn? What's next ?

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Since introduction of dedicated beamlines in mid-1990's nuclear resonant scattering became a major research tool added to the arsenal of scientists in multiple fields. Availability of experienced scientists and well-exploited opportunities for improved instrumentation, optics and detectors played a major role in this period.

Vital in this quest was the ability to expand the applications in physics, chemistry, earth sciences, biology, and materials science. The plethora of information hidden in the data are extracted due to development of excellent data analysis software like CONUSS, PHOENIX, and DOS. Parallel development of density functional theory also helped solidify the gains made experimentally. Optics and different methods are added for new elements, extending the number of nuclear transitions excited by synchrotron radiation to over 20 isotopes.

At present, we stand to gain much from next generation high brightness storage ring sources and FEL's, provided that the performance of spectrometers is pushed to further new limits of spatial and energy resolutions, and younger and talented developers take over the beamline operations.