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The transition from Si to Gas detection media in Nuclear Physics

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As of five to some ten years, the emerging radioactive beams and now multi petawatt laser facilities are sturdily transforming our base concepts in instruments in nuclear physics. The changes are fuelled by studies of nuclei close to the drip-line or exotique/extreme reactions. This physics demand high luminosity and wide phase space cover with good resolution in the registered position and induced wave-form. By exploring and judiciously modifying the micro-world of the particle/space physics instruments (Double Sided Strip Si Detectors, Micro-Pattern Gas Amplifiers, electronics), we are on the path to build our "dream" experiments. In this paper, I will present a selection of instruments that highlight the present trends with silicon and the growing shift towards gas media for particle detection.

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