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The Advanced Implantation Detector Array (AIDA)

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The objective of the DESPEC Advanced Implantation Detector Array (AIDA) project is to develop, commission and exploit a state of the art silicon detector array for decay spectroscopy experiments using the SuperFRS fragment separator at the FAIR facility. It is anticipated that AIDA will be operated in conjunction with other detection systems, such as gamma-ray and neutron detector arrays, which requires that AIDA should be very compact while still accepting all ions from the SuperFRS. To achieve these objectives AIDA will use large area double-sided silicon strip detector (DSSD) and application specific integrated circuit (ASIC) technologies. AIDA will be used for implantation-decay experiments and perform spectroscopy quality measurements of charged particle decays with energies from tens of keV to MeV. The challenge is to achieve this within microseconds of multi-GeV exotic ion implants and with an instrumentation density to match the very high degree of detector segmentation required for the observation and characterisation of long-lived decays. The current status of the AIDA project will be presented.

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