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Coincidence auxiliary detection devices

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Active targets are very versatile instruments. On some aspects, like the luminosity of a reaction measurement, they have a clear advantage over more traditional setups. In other areas, sometimes a compromise has to be chosen in order to obtain usable information on various parameters such as energy, channel and particle identification.
The use of auxiliary detectors and techniques can help improve the performances of active targets. The dynamic range for the detection of charged particles in the gas can be extended by the use of magnetic fields and/or solid-state detectors surrounding the active volume. These devices, besides providing direct information, also give additional degrees of freedom in the choice of the optimal configuration of the whole detection setup, for example allowing more freedom in the choice of the gas parameters.
The demand for energy resolution becomes especially important when dealing with medium-mass and heavier nuclei, for which a high density of states is expected. The addition of an array of gamma-ray detectors may represent a viable solution, provided that a high detection efficiency is ensured. At the same time, granularity is necessary for an effective correction of Doppler broadening. Electronic integration of the auxiliary arrays with the new-generation active target devices is also an important factor.
We will review these aspects and present some results of ongoing studies and tests.

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