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FAZIA electronics: from detectors to acquisition

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FAZIA is a modern apparatus based on Si-Si-CsI(Tl) telescopes designed to have excellent particle identification capabilities with relatively low energy thresholds and high efficiency. To achieve the desired goals, besides the use of carefully designed and selected detectors, a state-of-the-art digitizing front-end electronics is mandatory. Compact and integrated front-end cards are used to implement many functions just next to the telescopes, under vacuum. Moreover, digital signal processing techniques are used to extract every possible information from signal shapes. Such an advanced front-end electronics is accompanied with a modern acquisition system to reconstruct the event and to handle high data throughput. The whole apparatus and all the electronics are modular and easily transportable among laboratories, allowing to arrange the blocks in almost any configuration and to couple them to many other detectors, such as four-pi arrays or active targets. In my contribution I will review the operation and the performance of a typical FAZIA module from the detectors to the data transport. I'll focus on the characteristics which make FAZIA a cutting-edge apparatus in the panorama of heavy-ion experiments with stable and radioactive beams.

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