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## Low Gamma Activity Measurement of Meteorites Using HPGe-NaI Detector System

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The radioactivity in natural samples like cosmogenic isotopes in meteorites, in Moon samples and in earth and ice in Antarctica, for example, produced by protons, neutrons,  $\mu$  mesons and other charged particles is very low, usually below 0.001 disintegration per gram. Therefore, very special techniques are required, particularly if the sample can not be destroyed for chemical separation and also must have possibility of counting large amount of sample. For this purpose we have developed a highly selective Ge-NaI coincidence spectrometer, operating in the underground Laboratory of Monte dei Cappuccini (INAF) in Torino. We have then improved it by developing a multiparametric acquisition system, which allows better selectivity of the coincidence windows (e.g., in meteorites, to disentangle cosmogenic  $^{44}\text{Ti}$  signal from overlapping  $^{214}\text{Bi}$ , originated by naturally occurring  $^{238}\text{U}$ ). Applications of this system to the study of meteorites (chondrite, achondrite and iron samples) will be described.

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