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A rapid overview of the basic analog front end chain is given, with an emphasis on the noise analysis of such a chain, and the effects of shaping. The typical behaviors for bipolar and FET first stages are discussed, and their behaviour as a function of idealised loads is considered.

In the second part, a specific problem in neutron detection is treated: resistive charge division.

The working principle is explained, the noise model is shown and a few concrete applications at the ILL are illustrated.