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Signal formation and designed optimization of Resistive AC-LGAD (RSD)

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Resistive AC-LGAD (RSD) are sensors based on an evolution of the traditional LGAD designed aimed at eliminating the no-gain area between pads.
The principle of operation of RSD is based on the combination of 3 elements: the gain layer, a resistive n-doped junction contact, and the AC coupling. The design of RSD exploits the signal sharing among neighboring pads to achieve extremely good position and timing precision.

In this talk, we will illustrate the principle of signal formation in RSD, and show results of the first FBK RSD production.

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