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# The role of KID in future millimetre and sub-millimetre instruments

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## Abstract

The Kinetic Inductance Detectors (KID) have progressively emerged, since our pioneering experience at the 30-meters telescope in 2009, as the preferred choice for designing and building new large instruments operating at mm and sub-mm wavelengths. I will resume the experience acquired in France in the past twelve years, that allowed to successfully design, build, deploy and exploit four instruments on three different telescopes. NIKA and NIKA2 at the IRAM 30-meters in Pico Veleta (Europe), KISS at the QUJIOTE telescope in Tenerife (Africa) and recently CONCERTO at the APEX 12-meters dish at Chajnantor (South America). I will try to place these experiences in the framework of the evolving international context. In summary, the use of KID-based instruments for imaging, polarimetry and spectroscopic measurements has been achieved by the mentioned experiences. In the future, and in particular for space applications, further integration of polarimetric and spectroscopic functions in the focal plane might be required. An international R&D effort is on-going in this direction.

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