

Invited Talk

SpaceKIDs - The development of Kinetic Inductance Detectors for Space Based Applications

S. Doyle,^a A. Baryshev^{b,h}, J. Baselmans^b, A. Bidaud, J. Bueno^b, M. Calvo^c, A. Gomez^d, N. Llombart^e, M. Griffin^a, M. Grim^b, P. Hargrave^a, T. Klapwijk^e, J. Martin-Pintado^d, A. Monfardini^c, H. Steenbeek^f, K. Wood^g, A. Woodcraft^g

^a*School of Physics and Astronomy
Cardiff University
Email: simon.doyle@astro.cf.ac.uk*

^b*SRON Netherlands Institute for Space Research
Email: J.Baselmans@sron.nl*

^c*Institut Neel, CNRS
Universite Joseph Fourier
Email: alessandro.monfardini@neel.cnrs.fr*

^d*Centro de Astrobiologia (CSIC-INTA)
Email: jmartin@cab.inta-csic.es*

^e*Kavli Institute of Nano Science
Delft University of Technology
Email: T.M.Klapwijk@tudelft.nl*

^f*AimValley BV
Email: hsteenbeek@aimvalley.nl*

^g*QMC Instruments Ltd
Email: k.wood@terahertz.co.uk*

^h*Kapteyn Astronomical Institute
University of Groningen
Email: A.M.Baryshev*

The past decade has seen a revolution in the development of Kinetic Inductance Detectors (KIDs) with the technology moving from the concept stage to large format imaging arrays on ground based telescopes observing at mm, sub-mm and optical wavelengths. The simplicity of the KID along with its high sensitivity and natural multiplexing in the frequency domain make it a strong candidate to fulfill the detector role for the next generation of space-based observatories. The SpaceKIDs program is a three-year, European funded project involving five academic institutes and two industrial partners across Europe working to develop KIDs towards the next generation of space based astronomical and Earth observing instruments. The study aims to highlight and address the key issues facing the KIDs deployment as a space based detector, such as optical bandwidth, speed, power consumption and susceptibility to cosmic rays. This presentation will give an overview of the SpaceKIDs project and its relevance to the scientific community along with key results from the project to date.