

## The Next Generation of Coherent Detector Systems for Far Infrared Astronomy

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Very high-resolution spectroscopy is necessary for study of a number of fundamental topics in astrophysics. Coherent technology has been developed and deployed throughout the far infrared, and has had an enormous impact on many areas of astrophysics. In spite of the impact of this technology, the systems developed to date are rather limited in capability and autonomy and require significant advancements to address the next generation of high-resolution questions. A number of architecture advances including spatial arraying for mapping, phase arraying for spatial resolution and reduced complexity of subsystems are required for future telescopes. Additionally, a number of basic component technologies require invention, improvement or simplification. Lastly operational test beds to perform science are necessary for verification of technologies and system architectures. A brief view of the future potential of coherent high-resolution astronomy will be presented.