Contribution ID: **48** Type: **Invited Poster**

High Performance Transportable Optical Frequency References Based on a Dual-Axis Cubic Cavity (DACC) Configuration

We present high performance, transportable, dual-axis optical frequency references based upon NPL's patented cubic cavity design. These cavities have demonstrated leading insensitivity to micro-vibrational perturbations and are pushing fractional frequency instability performance beyond the mid 10-15 level at 1 s. These characteristics led themselves to many applications including spaced-based gravitational wave detection, low phase noise microwave generation and laser stabilisation requirements in transportable optical lattice clocks.

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Track Classification: Miniature, Portable and Space Systems