

Three-Corner Hat Comparison Between Dissimilar Optical Atomic Clocks at an International Naval Exercise

We report on a recent international collaboration in which three emerging optical clock technologies were trialed at sea as part of an international naval exercise.

Each system included an integrated optical frequency comb for synthesis of microwave clock signals, and three-cornered hat measurements were made of both optical and microwave outputs over more than six weeks of operation.

This is a powerful demonstration that optical clocks with integrated optical frequency combs are ready for use outside of the lab.

Author: Dr HILTON, Ashby (Institute for Photonics and Advanced Sensing, University of Adelaide)

Co-authors: LUITEN, Andre (Institute for Photonics and Advanced Sensing, University of Adelaide); WHITE, Benjamin (Institute for Photonics and Advanced Sensing, University of Adelaide); PERRELLA, Chris (University of Adelaide); BILLINGTON, Christopher (Institute for Photonics and Advanced Sensing, University of Adelaide); LOCKE, Clayton (QuantX Labs); KLANTSATAYA, Elizaveta (Institute for Photonics and Advanced Sensing, University of Adelaide); AHERN, Emily; ALLISON, Jack (Institute for Photonics and Advanced Sensing, University of Adelaide); Dr ELGIN, John (United States Space Force, Quantum Sensing and Timing); MARTIN, Kyle (Blue Halo); NELLIGAN, Montana (Institute for Photonics and Advanced Sensing, University of Adelaide); BOURBEAU HÉBERT, Nicolas (Institute for Photonics and Advanced Sensing, University of Adelaide); OFFER, Rachel (Institute for Photonics and Advanced Sensing, University of Adelaide); Mr BEARD, River (Blue Halo); SCHOLTEN, Sarah (Institute for Photonics and Advanced Sensing, University of Adelaide)

Presenter: Dr HILTON, Ashby (Institute for Photonics and Advanced Sensing, University of Adelaide)

Track Classification: Miniature, Portable and Space Systems