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Título: Snorkelling between the stars: submarine methods for astronomical observations.

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Resumen:

Trying to reach diffraction-limited astronomical observations from ground-based telescopes is very challenging due to the atmospheric effects contributing to a general blurring of the images. However, astronomy is not the only science facing turbulence problems, obtaining quality images of the undersea world is as ambitious as it is on the sky. One of the solutions contemplated to reach high-resolution images is the use of multiple frames of the same target, known as fusion super-resolution, which is the principle for Lucky Imaging. Here we present the successful result of join efforts between the undersea and the astronomical research done at the Canary Islands. We have applied a selective filter for frames using the SSIM (Structural SIMilarity) objective metric developed for super-resolution underwater imaging to astronomical frames. By implementing SSIM selection algorithms into the Lucky Imaging procedure we have upgraded our method to obtain diffraction-limited astronomical images even under bad seeing conditions.