

SAG19: Signal Detection Theory and Rigorous Performance Metrics for Exoplanet Imaging

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SAG19 Motivation and Goals

- The term “contrast” falls short as a general purpose performance metric
- Goal #1: Create a unifying figure of merit for the performance of direct imaging testbeds, ground and space based observations, internal and external occultors, post-processing algorithms, and surveys
- Goal #2: Provide user-friendly code to the community for generating this new figure of merit
- Goal #3: Provide a standard dataset for the consistent comparison of new post-processing algorithms

SAG19 Progress

- Goal #1: Create a unifying figure of merit for the performance of direct imaging testbeds, ground and space based observations, internal and external occultors, post-processing algorithms, and surveys
 - Jensen-Clem et al. 2017 *A New Standard for Assessing the Performance of High Contrast Imaging Systems*. Submitted to AJ, response to referee to be completed this month.
 - Odds ratio analysis to be included in future publications

SAG19 Progress

- Goal #2: Provide user-friendly code to the community for generating this new figure of merit
 - Planned work: incorporate new performance metrics into the Vortex Image Processing package (Gomez Gonzalez et al. 2017)

SAG19 Progress

- Goal #3: Provide a standard dataset for the consistent comparison of new post-processing algorithms
 - Planned work: create a website to host benchmark high contrast imaging datasets for the demonstration of new reduction methods by the community
 - Feedback and suggestions welcome!

The Landscape is Changing . . .

