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Observations of Fast Rotating Stars with the VERITAS Stellar Intensity Interferometer (VSII)

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Abstract: The VERITAS Stellar Intensity Interferometer (VSII) uses an intensity interferometric technique to measure the angular extent of stellar envelopes of hot (OBA) stars and binary systems. VSII has previously demonstrated the ability to reconstruct the sub-milliarcsecond angular diameters of individual stellar photospheres (eps Ori, bet CMa, bet Uma) with a precision better than 5%. Recent improvements in instrumentation and analysis have enabled VSII to reconstruct highly deformed 2-D stellar photospheres of fast-rotating stars, such as gam Cas. In this talk, I will describe recent VSII observations of fast-rotating stars and the VSII sensitivity for measuring the equatorial elongation and orientation of deformed stellar photospheres. We compare the reconstructed VSII photosphere with a simulated PHOENIX model of a fast rotator.

Collaboration(s)

VERITAS Collaboration

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