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## New results on the sky localization and polarization mode reconstruction of gravitational waves

We report new developments in the L2D+GWPM procedure for sky localization using two detectors and gravitational-wave polarization modes measurement.

We review the new findings presented in <https://doi.org/10.1007/s10509-025-04465-0>, where we report the first direct measurement of spin-2 gravitational-wave polarization modes.

We present validation of the procedure using injected synthetic spin-2 polarization modes.

We show sky localization for the GW170104 and GW150914 events, comparing our results with previous estimates.

We show the reconstruction results for the spin-2 polarization modes of both GW170104 and GW150914, and discuss whether the two LIGO observatories detected nearly identical spin-2 polarization mode components of their respective gravitational waves.

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