

Distinguishing Time Delays from Multi-Messenger Transients with Deep Learning

Tuesday, September 27, 2022 11:30 AM (20 minutes)

Gravitationally lensed multi-messenger transients are promising probes for constraining cosmological parameters including the Hubble constant. We focus on developing a deep learning technique to estimate lensing time delays from various multiply imaged unresolved transients. We train convolutional neural networks and apply them to simulated supernovae lightcurves to determine whether there are one or two or four lensed images, and measure the corresponding time delays. We accurately identify the number of images and estimate the time delays exceeding ~6 days.

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