Science Objectives Assessment for LightIMRI

Automated Report
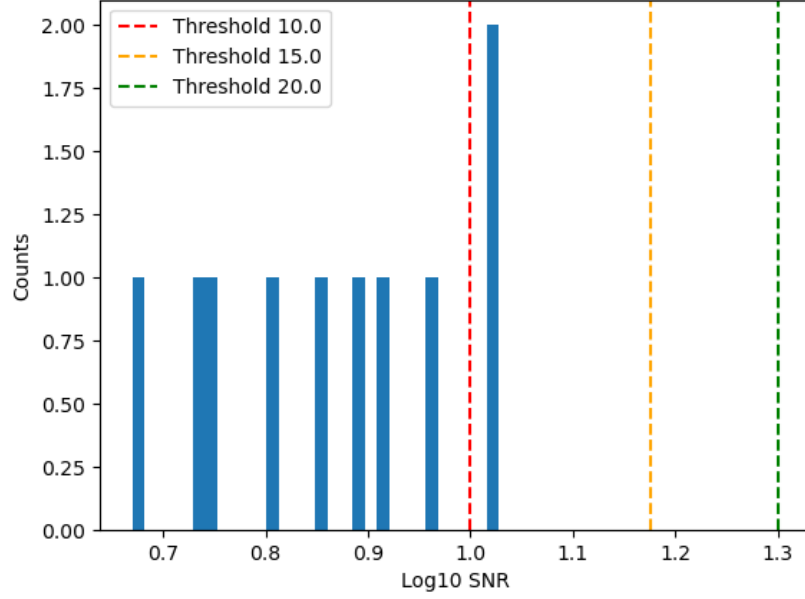
April 16, 2025

1 Summary

Source: LightIMRI
SNR Status: FAIL (SNR < 10.0) (Mean SNR = 7.59)

Parameter	Source Frame Value	Detector Frame Value
M central black hole mass	50000.0	75000.0
mu secondary black hole mass	10.0	15.0
a dimensionless central object spin	0.0	0.0
p_f $final semi-latus rectum$	6.119999999999999	6.119999999999999
e_f $final eccentricity$	0.01	0.01
z redshift	0.5	0.5
dist luminosity distance in Gpc	2.9531474419716544	2.9531474419716544
T inspiral duration in years	0.1	0.1

Parameter	Detector Frame Value Realization
M	50000.0
mu	10.0
a	0.0
p0	17.93762092159069
e0	0.03268970389185153
dist	2.9531474419716544
qS	2.167457192397029
phiS	5.064626421033691
qK	2.5925253786985096
phiK	2.5132867633242184
$Phi_p hi0$	5.648804392145888
$Phi_r 0$	5.459521077561353

2 Parameter Relative Errors

M: FAIL (Mean Error = 2.37e-04, Threshold = 1.00e-04)
mu: FAIL (Mean Error = 2.89e-04, Threshold = 1.00e-04)
a: FAIL (Mean Error = inf, Threshold = 1.00e-04)
e0: FAIL (Mean Error = 1.73e-02, Threshold = 1.00e-04)
dist: FAIL (Mean Error = 4.10e-01, Threshold = 1.00e-01)
Sky Localization: FAIL (Mean Error = 2.18e+03, Threshold = 1.00e+01)

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