Science Objectives Assessment for HeavyIMRI2

Automated Report

April 16, 2025
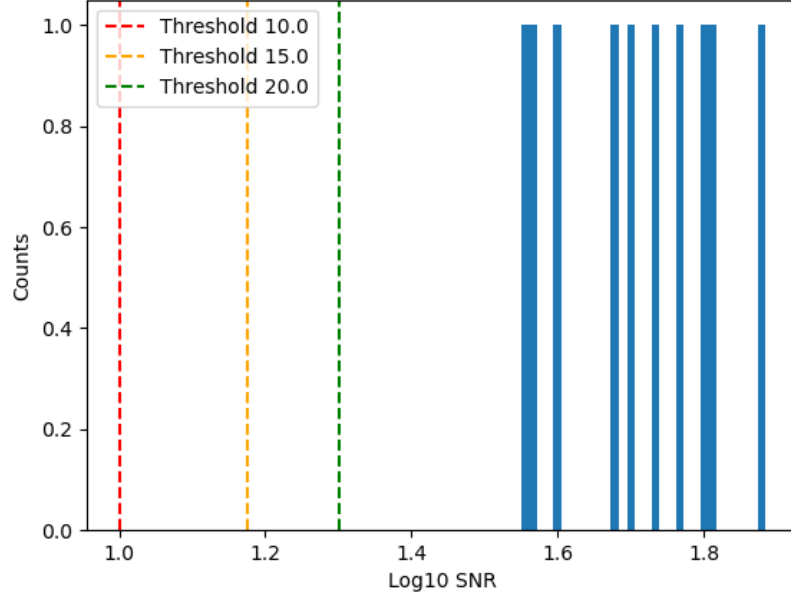
1 Summary

Source: HeavyIMRI2
SNR Status: PASS (SNR > 20.0) (Mean SNR = 52.73)

Parameter	Source Frame Value	Detector Frame Value
M central black hole mass	10000000.0	20000000.0
mu secondary black hole mass	1000.0	2000.0
a dimensionless central object spin	0.9	0.9
p_f $final semi-latus rectum$	2.4286931234927924	2.4286931234927924
e_f $final eccentricity$	0.01	0.01
z redshift	1.0	1.0
dist luminosity distance in Gpc	6.877098982389288	6.877098982389288
T inspiral duration in years	0.1	0.1

Parameter	Detector Frame Value Realization
M	10000000.0
mu	1000.0
a	0.9
p0	3.6206379125068864
e0	0.014352573979332164
dist	6.877098982389288
qS	1.1735776200533348
phiS	3.5195199649312214
qK	0.9853393318888648
phiK	1.4879783384326801
$\text{Phi}_p hi0$	1.6123097032032006
$\text{Phi}_r 0$	2.693843855091737

2 Parameter Relative Errors

M: FAIL (Mean Error = 1.18e-03, Threshold = 1.00e-04)
mu: FAIL (Mean Error = 1.01e-03, Threshold = 1.00e-04)
a: FAIL (Mean Error = 2.79e-04, Threshold = 1.00e-04)
e0: FAIL (Mean Error = 1.62e-01, Threshold = 1.00e-04)
dist: PASS (Mean Error = 4.74e-02, Threshold = 1.00e-01)
Sky Localization: FAIL (Mean Error = 4.67e+01, Threshold = 1.00e+01)