Black hole quasinormal mode spectroscopy with LISA MANISH M.
JADHAV, LIOR M. BURKO, University of Alabama in Huntsville — The signal–
to–noise ratio (SNR) for black hole quasinormal mode sources of low–frequency
gravitational waves is estimated using a Monte Carlo approach that replaces cur-
rently available methods that use all–sky averaging approximations and parameter
fixing. We consider an eleven dimensional parameter space that includes both source
and detector parameters. For the black-hole spin dependent radiation efficiency, $\epsilon_{\rm rd}$,
we use recent numerical relativity results. We find that in the black–hole mass range
$M \sim 4\text{–}10 \times 10^6 M_\odot$ the SNR is significantly higher than the SNR for the all–sky
average case, as a result of the variation of the spin parameter of the sources. This
increased SNR may translate to a higher event rate for the Laser Interferometer
Space Antenna (LISA). We also study the directional dependence of the SNR, and
show at which directions in the sky LISA will have greater response. We also identify
the LISA "blind spots" for this type of sources.

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