SGRB rate from Yonetoku relation for SGRB and the detectability of GW in O2 of aLIGO/aVirgo

Takashi Nakamura$^1$

$^1$ Kyoto University
E-mail (TN): nakamura.takashi.57a@st.kyoto-u.ac.jp

ABSTRACT

Using 8 SGRB with $E_p$, $z$, and $L_p$, Tsutsui et al. (2013) obtained Yonetoku relation for SGRB. Applying this relation to bright BATSE SGRBs, the minimum event rate of SGRB is $6.3(^{+3.1}_{-3.9}) \times 10^{-10} \text{events/Mpc}^3/\text{yr}$. Under the assumption of beaming factor of 100 and 4 times dimmer SGRBs, if 10% of SGRB is NS-BH or 100% is NS-NS, there is a good chance to observe a few GW events in O2 of aLIGO/aVirgo so that MAXI might see something at the same time.