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The comparison of SRs' variation affected by solar events observed in America and in China

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Schumann Resonances(SRs) are the electromagnetic resonance wave propagating in the earth-ionosphere cavity. Its characteristic of propagation are modified by the variation of ionosphere. So SRs can be the tools of monitoring the ionosphere which is often perturbed by solar events, x-ray emission and some other space-weather events (Roldugin et.al., 2004, De et al., 2010; Satori et.al., 2015).
In present work, the amplitude and intrinsic frequencies of SRs observed at RID station in America and YSH station in China are compared. The variation of SRs during the solar flare on Feb. 15, 2011 are analyzed. Two-Dimensional Telegraph Equation(TDTE) method is used to simulate the perturbation of ionosphere by solar proton events. From the simulation and observation, the asymmetric construction of ionoshphere which is perturbed by the solar event will affect the amplitudes and frequencies of SRs. Due to the interfere influence of forward and backward propagation of electromagnetic field, the SR amplitude on different station will present different variation. The distance among the lightning source, observer and perturbed area will produce the different variation of amplitude and frequency for different station' SR.