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Progress of Laser Measurement to Space Debris at Shanghai SLR Station

Shanghai SLR station has been developing the technology of laser measurement to space debris since 2008. According to characteristics of laser echoes from space debris and the experiences of practical measuring activities, the improvements of laser system, laser detector and spectrum filter are performed for laser measurement to space debris and the achievements are made with hundreds of passes of laser data from space debris in the distance between 500km and 2900km with Radar Cross Section (RCS) of $>10\text{m}^2$ to $<0.3\text{m}^2$. The laser measurement to space debris with the near infrared wavelength laser signal and multi-receiving telescopes are also developed in order to make the better performance of laser ranging to space debris.