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环境减灾卫星雪灾监测评估应用研究(PDF)

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Title: Application study on assessment of snow disaster monitoring with satellite for environment disaster reduction

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摘要: 环境减灾A、B星是我国首次发射的专门用于灾害监测与评估业务的两颗光学小卫星。作为环境减灾小卫星星座建设的重要组成部分,A、B星的发射标志着环境减灾小卫星星座组网的正式开始,也标志着我国灾害遥感监测评估有了稳定数据源。环境减灾小卫星星座A、B星分别搭载了多光谱成像仪、红外相机和超光谱成像仪,最大观测幅宽达到700km,最快重返周期小于48h。环境减灾小卫星星座具备宽视场覆盖、高重访频率、多谱段观测的特点,因此星座卫星多传感器的综合应用适合雪灾、洪涝灾害等大范围灾害的动态监测与评估。在介绍环境减灾A、B星有关性能指标和参数的基础上,结合环境减灾A、B星数据在2008年10月26日至28日西藏雪灾中的应用情况,对卫星数据在雪灾监测与评估业务中的应用能力和技术路线进行了研究和评价,并建立了环境减灾A、B星在雪灾范围评估、风险预警与灾情评估的技术路线,以期开展雪灾监测评估应用、尽快发挥减灾应用效益提供思路。

Abstract: Being the first part of the small satellite constellation for environment and disaster monitoring and forecasting(SSCEDMF),HJ-1 A and B have been launched in September,2008,which started the constellation construction.The two satellites would supply the optical observation data steadily for the disaster management.CCD,IRS and HSI sensors were installed on the SSCEDMF satellites.The swath of CCD is about 700 km,and the revisit-period of the constellation can be less than 48 hours.With the wide-swath,short revisit-period and multi-spectral character,SSCEDMF is suitable for the disaster monitoring and assessment.Based on the introduction of the satellites characters and the applications to the blizzard monitoring and assessment in Tibet during October,2008,this paper carries out the study on the application capability

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evaluation and technological route for the blizzard monitoring and assessment with the constellation data. Finally, a technical application method for blizzard monitoring, risk forecasting and disaster assessment, are established, which would contribute to expanding the application benefit of the satellite constellation.

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