[1]李震,周建民,谢酬.星载SAR差分干涉测量提取汶川地震同震形变场[J].自然灾害学报,2011,01:105-109.
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星载SAR差分干涉测量提取汶川地震同震形变场(PDF)

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Title: Extracting cosesimic deformation of the Wenchuan earthquake with spaceborne D-InSAR

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关键词: 差分干涉测量; 汶川地震; 地震形变

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摘要: 采用合成孔径雷达差分干涉测量技术对2008年5月12日四川汶川地震(Ms=8.0)的形变信息进行了提取,并开展了研究,利用地震前后ALOS/PALSAR数据,进行重复轨道差分干涉处理,得到了震前—震后的干涉条纹图和形变结果图.由雷达视向形变图可知,此次地震造成了隆起形变,最大形变出现在北川—映秀断裂带上,最大雷达视向形变量超过了90 cm,形变范围较大,川西的大部分地方都出现了不同程度的地表形变.结合川西的地质和地型构造情况,根据地震同震形变场的空间分布特征,对形变特征和震源构造进行了分析,发现二者有很好的一致性.

Abstract: Differential interferometric synthetic aperture radar(D-InSAR) was introduced to derive the deformation caused by Wenchuan earthquake(Ms=8.0) and the interferogram and the deformation result were obtained using two scenes ALOS/PALSAR data acquired respectively before and after the earthquake with the repeat-pass D-InSAR.From the deformation result in the radar line of sight(LOS) we can know that the Wenchuan earthquake leads to uplifting displacement and the maximum uplifting deformation in LOS is about 90 cm at the Beichuan-Yingxiu Fault.And there are varied degree of surface deformation in the most areas of west Sichuan.Considering the geological tectonism of the west Sichuan and spatial distribution of coseismic deformation field,the characters of the deformation and the earthquake source structure were analyzed.The result shows a good consistency.

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