Solar Coronal Radiophysics

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The radio-emission from unstable electrons in the solar corona provides important diagnostics in addition to EUV, SXR, HXR, and γ-rays. Frequencies in the dm-cm wavebands are believed to correspond to the range where primary energy release of flares should take place [1,2]. Therefore the radio observations with high temporal, spatial and spectral resolutions simultaneously will open new windows on flares and CMEs. The FASR[3] and Chinese Spectral Radioheliograph (CSRH)[4,5] aim at these goals and will provide first images of solar flares over an extended spectral range. The CSRH dm-wave and cm-wave arrays I and II are under construction and due to operate in 2011 and 2013 respectively.

Table 1. CSRH main specifications

	CSRH-I	CSRH-II
Frequency range	0.4-2 GHz	2-15 GHz
Antennas	Φ4.5m×40	Φ2.0m×60
Spectral channels	64	≥32
Temporal resolution	～100ms	
Spatial resolution	～10.3"-51.6"	～1.4"-10.3“
Dynamic Range (snapshot)	>25dB	
Polarization	RCP，LCP	

Keywords: Solar Corona; Solar radio emission; flares; CME;

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