

Finding of Subsidence Dynamics of Bandung-Indonesia by Using JERS-1 SAR and ALOS PALSAR DInSAR (1993-1998 and 2007-2008 Periods)

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Recently, some buildings and infrastructures at Bandung megacity, West Java Province, Indonesia are found wrecked and sunk. The ground water level is also found deeper comparing to the condition in decades ago. The frequency of large scale flood is increasing in some places in rainy seasons to complete the urban problems of this megacity. In this research, DInSAR(Differential Interferometric Synthetic Aperture Radar) is employed to investigate the land deformation or subsidence at Bandung and its surrounding area. The phenomenon of subsidence in periods 1993-1998 (6 years) and 2007-2008 (2 years) is analyzed by using L band Synthetic Aperture Radar data (JERS-1 SAR and ALOS PALSAR). These results are confirmed by using statistical data published by Statistics Indonesia (BPS) and ground surveys. These results show that the subsidence occurs concentrating at industrial complex and settlements of Bandung. Especially, the subsidence is occurring at Cimahi, Dayeuhkolot, and Baleendah districts continuously, hence it increases large scale of floods and wrecking the infrastructures in recent days. The DInSAR of ALOS PALSAR data also shows newly subsidence areas at industrial and settlement areas of Majasari, Majalaya, Cilampeni and Rancaekek districts. This research shows the capability of L band DInSAR to investigate the land deformation or subsidence in urban environments.