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ESTIMATION OF SEISMIC INTENSITY DISTRIBUTION AROUND OMAEZAKI-CITY FROM THE ROOF TILES DAMAGE BY THE 2009 SURUGA BAY EARTHQUAKE

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ABSTRACT: Seismic intensity distribution around Omaezaki-city was estimated from the roof tiles damage by the 2009 Suruga Bay Earthquake. First, roof tiles damage rate distribution was made using air photographs. We could easily distinguish roof tiles damage by air photographs. Next, period range of strong ground motions which correlates with roof tiles damage was investigated. We found that roof tiles damage correlate with JMA seismic intensity. Then, vulnerability function of roof tiles damage by JMA seismic intensity was made, and JMA seismic intensity distribution was estimated using this function. The JMA seismic intensity varies very locally. We found that JMA seismic intensity distribution can be estimated from roof tiles damage data by air photographs, but some problems were found such that we need sufficient number of wooden houses with roof tiles and that we could hardly distinguish wooden houses with roof tiles from house with no roof tiles.

Key Words: The 2009 Suruga Bay Earthquake, roof tiles damage, air photograph, JMA seismic intensity scale, seismic intensity distribution