

## **7.10 HAIL EVENT ANALYSIS AND DAMAGE ASSESSMENT BASED ON MULTI-DATA APPROACH**

S.TANI<sup>1</sup>, H.PAULITSCH<sup>1</sup>, B.SÜSSER-RECHBERGER<sup>1</sup>, R. TESCHL<sup>1</sup>

<sup>1</sup> Graz University of Technology, Institute of Microwave and Photonic Engineering,  
Austria  
satyanarayana.tani@tugraz.at

The main focus of our study is to combine the analysis of hail signature information from radar, lightning and ground measurements for the hail event analysis and crop hail damage assessment. The hailstorm days were assigned to examine the relation between radar-derived products and damages caused by hail in Styria, Austria during 2015. 3D single polarization C-band weather radar data and radiosonde freezing level data were used to indicate occurrence of hail and to derive hail kinetic energy. The spatial distribution maps of total hail kinetic energy were developed to capture the swath and intensity of the hail storms to identify potential hail damage areas. Hail events from ESWD (European Severe Weather Database) and crop damage reports from the Austrian Hail Insurance were used for validation. The hail signature information from radar was further compared with lightning trajectories. In total 16 days with high crop hail damage claims were considered for the investigation. The results show that in most cases radar-based hail signature information well correspond to the areas where hail events and damage footprints were reported.