

Radio backscatter studies of the unstable midlatitude E region Ionosphere
made in the European Sector

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By using a VHF radio Doppler system in Crete, Greece, and a large HF radar in south-east France, several experiments were performed during the last decade in order to investigate coherent backscatter from short-scale ionospheric E region plasma irregularities which occur in close relation with nighttime midlatitude sporadic E layers. Following an introduction to the topic, key observational findings obtained so far with these two radar experiments will be reviewed with the emphasis placed on their agreement with the existing plasma instability mechanisms. The purpose is to document the physical significance of these results and assess their contribution to the present state of knowledge.