A stochastic phase-velocity evolution model for ensemble rainfall nowcasting

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Natural hazard management often requires the development of reliable statistical rainfall nowcasting systems. Ideally, such procedures should be capable of generating stochastic ensemble forecasts of precipitation intensities on scales of the order of a few kilometers, up to a few hours in advance. Here we explore the feasibility of an ensemble rainfall nowcasting technique based on radar observations and on a stochastic model for the dynamics of the Fourier phases of the precipitation field.