Increasing needs for reliable precipitation measurements over land with low cost systems on short ranges in different hydrological applications.

Typically used X band is attenuating heavily in strong precipitation – up to totally blocking in Hail!

Project MARG was started to develop a system using solid state FMCW Doppler radar principle and QPE calculation method combining disdrometers and rain gauges data. The project was supported by EU.

The core of the system is the MARG C20DF radar sensor developed by TU GRAZ. Now the prototype is ready for field validation.

Software selectable carrier (5600 to 5650 MHz) Doppler FMCW with 2-stage FFT processing 2048 x 256 samples

Ground clutter cancellation Measurement range 30 km, resolution 50 m Dynamic range of ~ 85 dB

TX power: 20 W, Noise figure: 3-4 dB

Processing: Xilinx FPGA and dual ARM CPU

Output: dBZ, dBZ_cor, velocity, var_velocity

Format: polar HDF5

Control: WEB interface, CLI

Supporting cooperation is welcomed for completing the project goals!

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