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Measurements with the absolute calibrated L-band radio antenna of CROME for extensive air showers

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The Cosmic-Ray Observation via Microwave Emission (CROME) experiment is designed to study GHz radio emissions from extensive air showers. Multiple radio antennas measure externally triggered by the KASCADE-Grande air-shower array. The experiment is designed to detect a potentially isotropic, unpolarized component as expected by molecular bremsstrahlung emission in the low-energy electron plasma indicated by a collider experiment.

This contribution shows the measurements using the L-band (1-2 GHz) antenna of CROME. An absolute calibration of the receiver system was performed successfully and could be used for a specific signal search. In addition, the measurement results were compared to expected field strengths of molecular bremsstrahlung and simulations of other emission mechanisms.

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