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On the WIND spacecraft construction impact to the RAD2 Y-antenna responce

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The results of computational simulation of response of the rotated Y- dipole of the WIND spacecraft are presented, which take into account an impact of the spacecraft magnetometer's "boom" at HF frequencies. It has been used a finite-difference frequency domain technique to simulate the electromagnetic structure, that has been presented as a composition of matched Y-dipole and the boom like an open dipole.

The simulation results confirm the angular shifts of the Y-dipole responses which were observed in the RAD-2 observations of the SURA signals at frequencies 8925, 5475 and 4525 kHz.The observed asymmetry of the Y-dipole responses is caused by polarization status of incident waves.

The obtained results could be used for arrival direction determination using the spacecrafts equipped with short dipoles.

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