

Towards more realistic radio simulations

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There is a large body of predictive research being done in preparation for the Square Kilometer Array. However, while the astrophysical models for these are usually well-informed, they fail to treat the radio interferometric signal capture and imaging process with the same vigour. The wide variety of modulations, both multiplicative (direction dependent, direction Independent and sub-categories thereof) and additive (For Eg: SEFD) are frequently ignored in favour of simply convolving simulation output with a Gaussian equivalent to the beam size of the synthesized beam of the telescope. We present some of the work we have undertaken for the SKA SDC3A, hoping to better account for these effects.

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