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*News from the Propp Machine*

The Propp machine, also known as rotor router model, is a non-random random walk invented by Jim Propp. Instead of hopping to a random neighbor, here is what you do in this model. Each vertex is equipped with an arrow pointing to a neighbor. In each time step, you follow the arrow, then the arrow is up-dated to ‘the next’ neighbor (according to some pre-specified order, but think of ‘clock-wise’, if you prefer).

Through this mechanism of ‘rotating the arrows’, each vertex serves its neighbors highly equitable (in fact, better than in the random walk model). This makes the Propp machine quasi-random analogue of the random walk, and raises the question of similarities or differences of both models. In the talk, I review some ‘classical’ results and present some very recent ones.