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MATLAB-based simulations for teaching undergraduate information theory course.

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Summary: Based on nearly thirty years' teaching experience of undergraduate information theory course in Beihang University, the teaching team applies MATLAB simulations into the teaching of undergraduate information theory courses. MATLAB simulations, such as information statistics calculator, Markov source's convergence process simulation, channel characteristic simulations, and information source coding, are introduced. The simulations can enhance students' study interests of learning information theory and help them understand the basic concepts and methods. The students' grades and records, in the recent three years are analyzed for us to explore MATLAB-based simulations' effect. The actual teaching experience in MATLAB simulation and numerical experiments make students' education effective.

Classification: U75 M55 K95

Keywords: information theory course; simulation; MATLAB; teaching