Transport Equation on Semidiscrete Domains

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In this talk, we analyze the transport equation on semidiscrete domains. We consider discrete, discrete-continuous and discrete-time scale domains. We discuss its relationship with nonlinear hyperbolic problems and corresponding subjects from numerical analysis (semidiscrete methods, conservation laws, …). Analysing integral and sign conservation, we disclose an interesting relationship of the transport equation with counting stochastic processes (Poisson and Bernoulli processes) and the corresponding probability distributions. Consequently, we mention possible application of the transport equation as a generator of mixed probability distributions.

References

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