Causality with finite horizon of the past

Slađana Dimitrijević[1] and Ljiljana Petrović[2]

[1]Department of Mathematics and Informatics, Faculty of Science, University of Kragujevac,
sladjana_dimitrijevic@kg.ac.rs
[2]Department of Mathematics and Statistics, Faculty of Economics, University of Belgrade,
petrovl@ekof.bg.ac.rs

Motivated by Markov process of order p (p-markovianity) in the discrete time case and recent studies of stochastic systems with memory, we suggest the new concept of causality for continuous time stochastic processes which deal with finite horizon of the past. Also, we present results which show connections between given concept of causality and marginalization of continuous time Markov processes.