Dynamical interaction networks GINESTRA BIANCONI, Northeastern University,Boston, MA, USA, JULIETTE STEHLE, Centre de Physique Threorique, Luminy, Marseille,France, ALAIN BARRAT, Centre de Physique Theorique, Luminy, Marseille, France — We present a modeling framework for dynamical networks in the context of agent based models of social interactions. Agents can be either isolated or in groups of diverse sizes. Each agent's may change state at each time step with probabilities depending on its state and on the time since the last change. Different microscopic laws lead to different behaviors, in particular to different distributions of contact times between individuals. In particular observed fat distributions of interaction times are described by a history dependent transition probability and a reinforcement dynamics that is grounded in a underling cognitive Hebbian mechanism. The modeling framework can be easily extended, and paves the way for systematic investigations of dynamical processes occurring on dynamical networks, and of the role of the networks characteristics such as narrow or broad distributions of contact durations.

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