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Evolution of dynamical facilitation approaching the glass transition RAPHAEL CANDELIER, LJP - UPMC, ASAPH WIDMER-COOPER, School of Chemistry, University of Sydney, DAVID REICHMAN, Columbia University, GIULIO BIROLI, IPhT - CEA, OLIVIER DAUCHOT, EC2M - ESPCI — We investigate the relaxation dynamics of simulated dense bidimensional supercooled liquids composed of softly interacting particles. We show that the long time scale dynamical heterogeneities result from the aggregation of several elementary relaxation events, themselves formed by collective leaps. By varying the temperature, we show that for low temperatures there is a growing excess of probability to find cage jumps that are close both in space and time, and that the network of spatio-temporal facilitation evolves towards a collection of clearly defined large events. We discuss these observations and specifically the relative importance of facilitation when approaching the glass transition.

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