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external vibration that is simulated by simple Monte Carlo dynamic algorithm, we observe various coarsening phenomena accompanied by compaction. Domain growth occurs via coarsening of topological defects (domain walls) that correspond to chains of vacancies in these models. Due to the effect of gravity, the coarsening is found to exhibit a strong anisotropy with fast linear growth along the vertical direction, versus slow horizontal domain growth. In the late time stage, domain growth is dominated by the horizontal random walks of vertical domain walls. The time dependence of the size of typical ordered domain, exhibits a few cross-overs (due to anisotropy) with the asymptotic growth law (expected to be diffusive) appearing only at the late time stage. We also found anomalous Porod law behavior in the scaling functions.

F-P014 **A Study on the Shear Viscosity of Simple Liquids** 정길환(전북대학교) A molecular dynamics investigation of the microscopic behavior of a liquid subjected to shearing is carried out. The dynamical response of a liquid system and of a highly densified glassy system to various shear strain histories is outlined. At low shear rates, the data agree with the prediction of linear response theory. At higher shear rates, nonlinear behavior is observed. The shear rate dependence of the shear viscosity in the high shear regime seems to be best fitted by Ree-Eyring theory.

F-P015 **Characterization of The Noise Effect on Weak Synchronization** 임우창(강원대), 김상윤(강원대), A. Jalnine(Saratove State Univ., Russia) We investigate the noise effect on weak synchronization in two coupled identical one-dimensional (1D) maps. Due to the existence of positive local transverse Lyapunov exponents, the weakly stable synchronous chaotic attractor (SCA) becomes sensitive with respect to the variation of noise intensity, as it exhibits a parameter sensitivity in presence of a parameter mismatch between the two 1D maps. To quantitatively characterize such noise sensitivity, we introduce a new quantifier, called the noise sensitivity exponent (NSE), that measures the degree of the noise sensitivity. For the case of bounded uniform noise, the values of the NSE are found to be the same as those of the parameter sensitivity exponent characterizing the parameter sensitivity of the weakly stable SCA. In terms of the NSE, we also characterize the noise effect on the power-law scaling behavior of the escape time from the invariant diagonal for both the bubbling and riddling cases occurring in the regime of weak synchronization.

F-P016 **Effect of Asymmetry on The Loss of Chaos Synchronization** 임우창(강원대), 김상윤(강원대) We investigate the effect of asymmetry of coupling on the bifurcation mechanism for the loss of synchronous chaos in coupled systems. It is found that, only when the symmetry-breaking pitchfork bifurcations take part in the process of the synchronization loss for the case of symmetric coupling, the asymmetry changes the bifurcation scenarios of the desynchronization. For the case of weak coupling, pitchfork bifurcations of asynchronous periodic saddles are replaced by saddle-node bifurcations, while for the case of strong coupling, pitchfork bifurcations of synchronous periodic saddles transform to transcritical bifurcations. The effects of the saddle-node and transcritical bifurcations for the weak asymmetry are similar to those of the pitchfork bifurcations for the symmetric-coupling case. However, with increasing the "degree" of the asymmetry, their effects change qualitatively, and eventually become similar to those for the extreme case of unidirectional asymmetric coupling.

F-P017 **복잡 진동계에서 형성된 "line-defects"의 동적 특성에 대한 연구** 박진성, 우성