# COMPETITION OF BREAK-UP AND DISSIPATIVE PROCESSES IN PERIPHERAL COLLISIONS AT FERMI ENERGIES

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Heavy ion collisions in the Fermi energy regime may simultaneously show features of direct and dissipative processes. To investigate this behavior in detail, we study isotope and velocity distributions of projectile-like fragments in the reactions $^{18}$O (35 MeV/A) + $^{9}$Be($^{181}$Ta) at forward angles. We decompose the experimental velocity distributions empirically into two contributions: a direct, 'break-up' component centered at beam velocity and a dissipative component at lower velocities leading to a tail of the velocity distributions. The direct component is interpreted in the Goldhaber model, and the widths of the velocity distributions are extracted. The dissipative component is then successfully described by transport calculations. The ratio of the yields of the direct and the dissipative contributions can be understood from the behavior of the deflection functions. The isotope distributions of the dissipative component agree qualitatively with the data, but the modification due to secondary de-excitation needs to be considered. We conclude that such reactions are of interest to study the equilibration mechanism in heavy ion collisions.