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Mass exchange in KBO close binaries

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In addition to the binary KBO systems of wide-separators, a new class of KBOs that has been identified only recently has to do with the binary systems nearly in contact. EKBO 2001 QG298 belongs to this interesting class of objects which might account for 10-20% of the total EKBO population. To investigate their origin and physical properties, the first thing to do is to ask whether the objects in a binary system are of the same chemical composition or not. In this study, we will develop a numerical model to simulate the ballistic interchange of surface material as a result of collisional impact ejecta. The goal is to estimate the level of mixing of surface material between the binary components in preparation for future observational diagnostics. Such consideration can also be applied to asteroid close binaries.