

UNCHAINED POLYGONS AND THE N-BODY PROBLEM

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Look to a relative equilibrium of the n -body problem in a rotating frame which puts into resonance the frequency of a relative equilibrium of the n -body problem and that of an infinitesimal variation normal to the plane of the equilibrium. Continuation with respect to the rotating velocity of the frame yields a remarkable class of periodic solutions. The first example is the P_{12} family, discovered by C. Marchal, which links the relative equilibrium of Lagrange to the Eight. Other examples are given by the continuation of the n -gon.