

Inertial Steady 2D Vector Field Topology – Additional Material

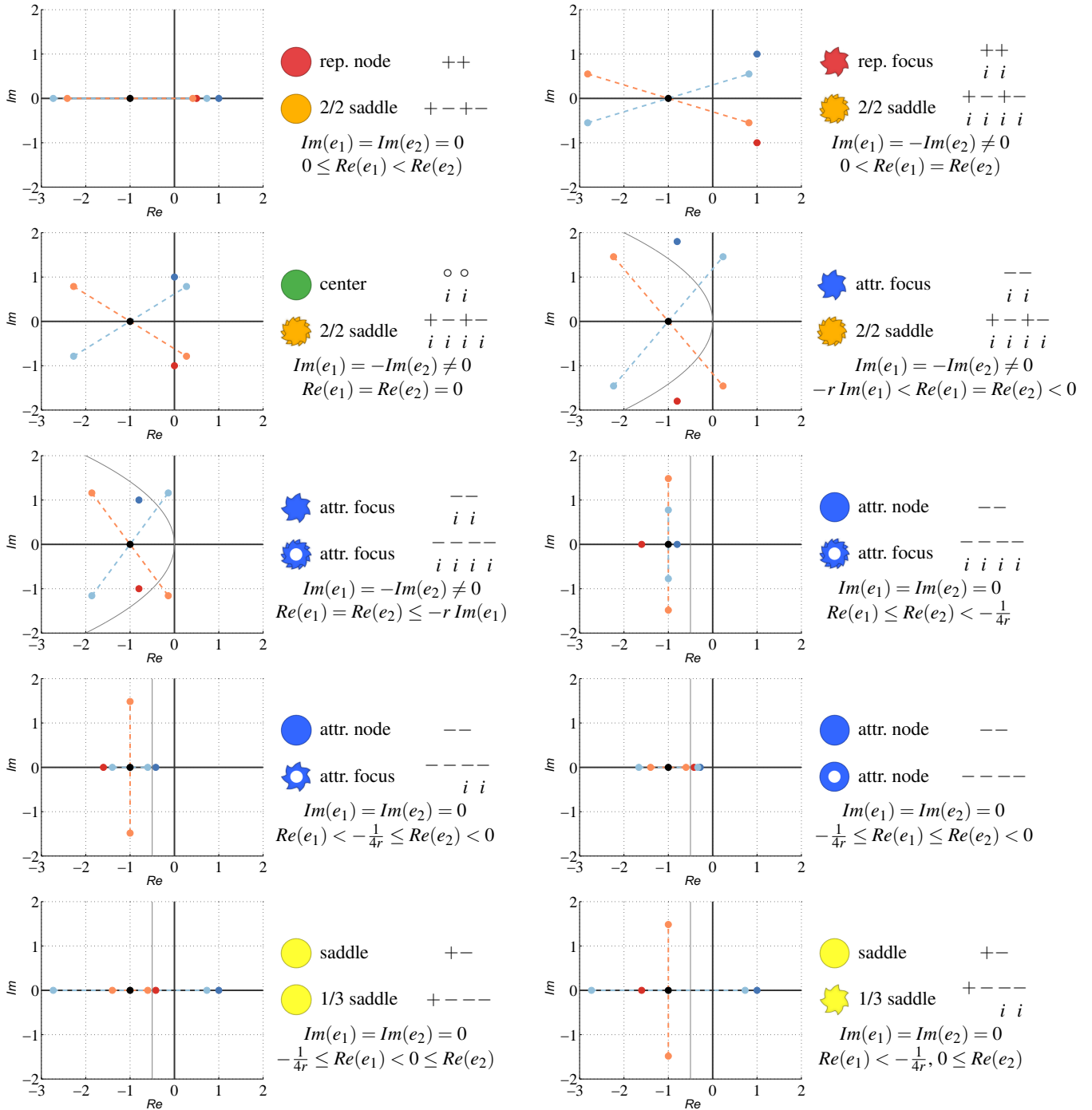


Figure 1: Classification of inertial critical points based on the eigenvalues e_1, e_2 of \mathbf{J} . W.l.o.g., we assume that $Re(e_1) \leq Re(e_2)$. The eigenvalue e_1 (●) belongs to the eigenvalues $f_{1,1}, f_{1,2}$ (●) of $\tilde{\mathbf{J}}$, and the eigenvalue e_2 (●) belongs to the eigenvalues $f_{2,1}, f_{2,2}$ (●). Each pair of eigenvalues $f_{i,1}, f_{i,2}$ is located diametrically opposite around the real-valued constant center $-1/(2r)$ (●), here shown for $r = 0.5$. For each possible case, we show the eigenvalues in the complex plane, the type of critical point in the massless and inertial case, and the eigenvalue conditions.