A series of papers by Arioli, Greenbaum, Pták and Strakoš [1994,1996,1998] resulted in a parametrization of the pairs \( \{A, b\} \) such that GMRES applied to \( Ax = b \) generates arbitrary residual norms and \( A \) has arbitrary spectrum. The poster gives:

- A parametrization of the pairs \( \{A, b\} \) such that the Arnoldi method generates arbitrary Ritz values in all iterations,

- A parametrization of the pairs \( \{A, b\} \) such that GMRES generates arbitrary (non-stagnating) residual norms and Arnoldi generates arbitrary (nonzero) Ritz values.