One way to get some understanding on the relations between equations and their solutions over complex numbers is to compute the monodromy of the covering

$$\text{(an equation, its solutions)} \mapsto \text{(an equation)}$$

over the relevant space of equations. One very general context in which we can wonder about monodromy groups is for square systems of polynomial equations

$$f_1(x_1, \cdots, x_n) = \cdots = f_n(x_1, \cdots, x_n) = 0$$

where we decide in advance not only the degree of each f_j but its support, that is which monomials show up in f_j. There are some general statements in this context, but already for $n = 2$, the monodromy groups of some systems $f_1 = f_2 = 0$ are not known. In this talk, I would like to report on recent progress on the computation of these groups. In certain classes of examples, I would like to describe the monodromy groups, explain why they are not full symmetric groups in general and, eventually, explain how we can compute them using considerations from toric/tropical geometry.