

1165-28-302

**Annina Iseli\*** ([annina.iseli@math.ucla.edu](mailto:annina.iseli@math.ucla.edu)) and **Anton Lukyanenko**. *Special families for projection theorems*. Preliminary report.

Marstrand's theorem states that given a Borel set  $A$  in the Euclidean plane, the dimension of the image of  $A$  under the orthogonal projection onto a line  $L$  equals the smaller of 1 and  $\dim(A)$ , for almost every line  $L$  that contains the origin. This theorem marked the start of a large series of results in the same spirit in various sorts of spaces that carry natural families of projections. The question whether for subfamilies (often called special families) of such families of projections Marstrand-type theorems hold as well has been a focus in recent research in the field. In joint work in progress with A. Lukyanenko, we are working on a closely related question. Namely, we consider projection families for which Marstrand-type theorems are known to hold as subfamilies of larger natural families of projections. It is then (in reasonable settings) straightforward to deduce Marstrand-type theorems for those bigger families. Our main interest is to use geometric tools to find and characterize other subfamilies of these large families of projections for which Marstrand-type theorems hold. A case of particular interest to us is the family of Moebius projections in the plane which contains the standard orthogonal projections as a subfamily. (Received January 19, 2021)