Homogeneous substructures in random ordered uniform matchings

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An ordered r-uniform matching of size n is a collection of n pairwise disjoint r-subsets (edges) of a linearly ordered set of rn vertices. For $n = 2$, such a matching is called an *r-pattern*, as it represents one of $\frac{1}{2}\binom{2r}{r}$ ways two disjoint edges may intertwine. Given a set $\mathcal{P}$ of r-patterns, a *$\mathcal{P}$-clique* is a matching with all pairs of edges belonging to $\mathcal{P}$.

I will present recent results determining asymptotically the largest size of a $\mathcal{P}$-clique in a *random* ordered r-uniform matching, for several classes of sets of patterns $\mathcal{P}$. This is joint work with A. Dudek, J. Grytczuk, and J. Przybyło.