1110-05-257 **E. Gorsky**, **M. Mazin** and **M. Vazirani*** (`vazirani@math.ucdavis.edu`), Math Department, One Shields Ave, Davis, CA 95616. *Affine permutations and rational slope parking functions.*

The Catalan numbers $1, 2, 5, 14 \ldots$ is one of the most well-known sequences in combinatorics. It enumerates over 100 families of combinatorial objects. Some of these families include the set of non-decreasing parking functions on $[n]$, the "$(n+1)$-restricted" affine permutations $w \in \widehat{S}_n/S_n$, and a basis of the finite-dimensional representation $eL_{(n+1)/n}$ of the spherical Cherednik algebra eH_ne. The above families and the bijections between them all generalize from $(n+1, n)$ to (m, n) when $\gcd(m, n) = 1$. Further, we can move from Catalan numbers to m^{n-1} by considering all parking function $PF_{m/n}$, the "m-restricted" $w \in \widehat{S}_n$, or the H_n-representation $L_{m/n}$.

Parking functions carry interesting combinatorial statistics. I'll discuss some of these statistics, how we hope they interact with $L_{m/n}$, and how they do arise in the space of diagonal harmonics, and in the geometry of certain affine Springer fibres.

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