

# Probabilizing Parking Functions (and what it implies about the diagonal harmonics)

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While literature on parking functions and the diagonal harmonics has often explored beautiful relationships between algebra, symmetric function theory, representation theory, and geometry, parking functions have surprisingly deep connections to probability as well. Such questions as: “What’s the average area of a parking function? What’s the expected number of cars in the first column? What’s the expected column of the first car?” all have connections to well known distributions in probability and tells us a bit (via the Shuffle Theorem) about submodules of the diagonal harmonics. We’ll discuss joint work with Persi Diaconis that looks at these connections and some open problems for rational parking functions. We’ll assume basic background about the Shuffle Theorem, but little to no background in probability.

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