On the Floer-theoretic nature of canonical bases

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In representation theory, the term "canonical basis" refers to a certain kind of distinguished basis of a representation V of a semisimple Lie group G. These bases usually have connections to sofisticated combinatorics (cluster algebras) and geometry (affine Grassmannians). In this talk we will discuss a picture in which these bases arise from Floer theory in the Flag variety G/B, with the clearest results in the SL(2) and SL(3) cases. This will display a direct geometric connection between Hamiltonian dynamics and Lusztig data, and it is an instance of equivariant mirror symmetry. (Joint work with Yanki Lekili and Nick Sheridan.)