Short curves on expander surfaces

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We discuss what a "typical" short curve on a random large genus hyperbolic surface looks like. In particular, for each L, there are finitely many curves of length at most L. We find length scales at which such a curve chosen at random is highly likely to be non-simple, or fill the whole surface. It is known that, with respect to many commonly studied random models, a typical surface will be expander. That is, it will be "highly connected," in the sense that we get effective mixing of the geodesic flow. We will give results that hold for all expander surfaces, and hence for random surfaces with respect to many different random models. This is joint work with Ben Dozier.