Probabilities of incidence between lines and a plane curve over finite fields

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In this talk, we study the probability for a random line to intersect a given plane curve, over a finite field, in a given number of points over the same field. In particular, we focus on the limits of these probabilities under successive finite field extensions. We will compute these limits under a mildly stronger condition, known as simple tangency. Finally, Veronese maps allow us to compute similar probabilities of intersection between a given curve and random curves of a given degree.