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**Pavel Bleher\*** (pbleher@iupui.edu), Department of Mathematical Sciences, IUPUI, 402 N. Blackford Street, Indianapolis, IN 46202. *Pfaffian Sign Theorem and Exact Solution of the Dimer Model on a Triangular Lattice.*

We will discuss an exact solution for the partition function and the monomer-monomer correlation function for the dimer model on the triangular lattice. We prove the Pfaffian Sign Theorem, and as an application we obtain an asymptotic behavior of the partition function with periodic boundary conditions with an exponentially small error term. In the second part of the talk we will discuss the long distance asymptotic behavior of the monomer-monomer correlation function. The first part of the talk is based on a joint work with Brad Elwood and Dražen Petrović, and the second one on a joint work with Estelle Basor. (Received February 04, 2018)