

“Integrable quantum systems and solvable statistical mechanical models”  
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## Integrable loop models and combinatorics

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### **Abstract**

We shall review the recent progress on the integrable model of loops based on Temperley–Lieb algebra at the special value  $\beta = 1$  of its parameter, in relation to the Razumov–Stroganov conjecture. Then we shall present some applications to combinatorics, settling in particular some old conjectures on Alternating Sign Matrices and Plane Partitions.