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Integrable Chiral Potts Model Alive and Well JACQUES H.H. PERK, Oklahoma State University, HELEN AU-YANG, Oklahoma State University — About two decades have passed since the introduction of the integrable chiral Potts model, parametrized by a high-genus curve [1,2]. In spite of this mathematical complication, several exact results have been obtained since, culminating in Baxter's proof [3,4] of the conjecture for the order parameters. Here we shall discuss several other results. First we shall show how the model fits in the phase diagram of a more general nonintegrable chiral Potts model and what we have learned about critical exponents and scaling behavior. Next, we shall mention some mathematical implications. Finally, we shall discuss our preliminary work on the pair correlation functions.

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