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Infinite order phase transitions in two-dimensional U(N) and SU(N) spin models.

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Two dimensional U(N) and SU(N) spin models are studied both analytically and numerically to establish the existence of BKT-like phase transitions. In U(N) case a BKT phase transition is found for any value of N. In SU(N) case two BKT-like transitions appear in the model with an adjoint interaction term, if it is large enough, though in the model without the adjoint term only a first order phase transition is found.

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