Discrete and continuous Nahm's equation

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Nahm's equations arise in a number of contexts. They are the self-duality equations for instantons invariant under 3 directions, the result of applying the Nahm transform to the Bogomolny equations for monopoles, the moment map for a hyper Kähler quotient and the limit of various supersymmetric quantum field theories involving branes. In the continuous case they can be solved as an integrable system in terms of a Lax pair. Associated to a solution of Nahm's equations is an algebraic curve called the spectral curve and the equations correspond to a flow on the Jacobian of that curve.

I will survey the various aspects of Nahm's equations, except for the branes which I don't understand and discuss recent work with Michael Singer (Edinburgh). Michael and I have understood the discrete Nahm's equations (or Braam-Austin equations) in terms of spectral curves and a discrete 'flow' on their Jacobian.