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Monopoles on the product of a surface and the circle.

One of the important ingredients of the Witten-Kapustin approach to the geometric Langlands program is the study of singular monopoles on the product of of a Riemann surface and an interval. One special case of this in some sense is the product of a Riemann surface and a circle. We study the moduli of these, and prove a Hitchin-Kobayashi correspondence. When the surface is a torus, there is in addition an interesting Nahm transform to instantons on the product of a three-torus and the line. (with Benoit Charbonneau)