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*Nahm transform for parabolic integrable
connections on \mathbf{P}^1*

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Abstract

We define Nahm transform for parabolic integrable connections on the Riemann sphere with a finite number of regular singularities and an irregular singularity of Poincaré-rank 1, under some hypotheses on the singularity behaviour. We first give an analytic construction, then an algebraic one in terms of the associated Higgs bundle. The latter is joint work with Kursat Aker. We go on to show that the transform induces a hyper-Kähler isometry between moduli spaces. Finally, if time allows, we outline a possible application to the Deligne–Simpson problem.