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*Searching for the geometry of the moduli of  $SU(2)$  YMH  $k$ -monopoles using Gauss-Manin connection in disguise*

We will present the work written in arXiv:1709.01545 where we showed that the curvature equations of the reduced moduli of Yang-Mills-Higgs 2-monopoles resumes to, up to a homomorphism, a vector field in the moduli of the enhanced spectral curve as described by the method Gauss-Manin connection in disguise. We will also discuss recent progress for symmetric monopoles.