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The Structure and Evolution of Solar Magnetic Flux Ropes and Their Magnetosheaths (SolMAG)

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European Research Council Consolidator grant project SolMAG started in June 2017. This project focuses on investigating coronal mass ejections (CMEs) and their turbulent sheath regions. The key aim of the SolMAG project is to obtain breakthroughs in estimating and understanding magnetic field profiles in CME's and their sheath regions from Sun to Earth. Realistic estimations of the magnetic field structure can be used to answer important questions 1) When and how flux ropes embedded in CMEs form, 2) How shocked sheath region plasma forms, and 3) How turbulent sheaths interact. The project combines coronal modelling and extensive data analysis.