Coronal Magnetic Field Modeling Related to Flux Emergence

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We have predicted the magnetic helicity sign of active regions (ARs) using longitudinal magnetic field observations of their birth and early evolution. The selected ARs have particular characteristics, they present coronal sigmoidal structures what makes them candidates to eject mass into the interplanetary medium. In order to improve space weather prediction, it is necessary to corroborate our prediction of the magnetic helicity sign using other proxies. In this work, we extrapolate the observed photospheric magnetic field to corona using a linear force-free approach. Comparing our model to coronal soft X-ray and/or EUV observations, we estimate the magnetic helicity sign. Our results confirm the sign previously determined using only photospheric data.