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Stellar flare morphology across the HRD (12+3)

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Stellar flares are the most easily observable manifestations of magnetic activity. With the advent of high precision spaceborn photometry, our knowledge on flares increased significantly. While most of the studies so far focused on simple observables like flare energy or amplitude, here we aim to use all the morphological information encoded in the flare light curves. Using data from the Kepler and TESS missions, we search for changes in flare shapes, using principal component analysis and automated clustering. We also aim to construct new flare templates for different types of stars, including flaring giants.

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