Solar flare is a process which releases magnetic energy stored in the solar corona due to the effect of magnetic reconnection. Similar activity has been observed on other stellar types, namely type K and M stars, which usually have vast and strong magnetic field. Often during flares on M stars we observe asymmetry of profiles of some spectral lines with enhanced red wing. The cause of these asymmetries is not well understood. The aim of this thesis is to analyse spectra of AD Leo, which is frequently flaring dMe star, and to model radiation of the Hα line coming from flare loops analogically to flare loops on the Sun. The light curves of selected spectral lines rise sharply during initial phases of flares and gradually fall back to preflare state. The light curves of continua surrounding these selected spectral lines rise sharply in the blue part of the spectrum during flares. The continua in the red part exhibit only small rise. Simulations of Hα radiation coming from flare loops yield asymmetric profiles with highly enhanced red wings.