

# **Magnetic reconnection and electron acceleration in the solar lower atmosphere**

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Using high-resolution spectral data obtained with THEMIS on 2002 September 5, we have computed the semi-empirical atmospheric models of Ellerman bombs (EBs) and microflares (MFs). Our results indicate that for both of them there is a temperature bump up in the low-chromosphere. Compared to the quiet-Sun atmosphere, the temperature bump up of the bright MFs is about 2200K, while that of the conspicuous EBs is about 1300K, and locates deeper than that for MFs. The temperature bump up can be produced by the magnetic reconnection in the solar lower atmosphere. Assuming electrons being accelerated during the magnetic reconnection, we computed the non-thermal semi-empirical atmospheric models of EBs and MFs, which can well reproduce the observed  $H\alpha$  and CaII 8542 Å lines. The parameters and the energy deposit of the electron beams have been discussed.