A large number of applications are concerned by human action recognition notably in multimedia and more particularly for video retrieval and archival. Usual approaches focus on probabilistic methods and assume a still camera. Here, a method based on the Transferable Belief Model fusion process and considering a moving camera is proposed. In this framework, the camera motion estimation and temporal variations of three major human points are combined. The method is tested on videos of athletics meetings in which actions running, jumping and falling are to be recognized. Results show the validity of the method for action recognition.