



**Fig.4** Glacier velocities calculated by offset-tracking method using Sentinel-1 SAR data in surge phase from 2015-2-18 to 2016-04-11, and in quiescent phase from 2010-03-04 to 2010-07-20 using PALSAR SAR data, along the velocity profile in Fig.1. The X-axis distance is corresponding to hatch in Fig. 1. The dots mark the velocity in surge phase, the lines show the velocity in quiescent phase.