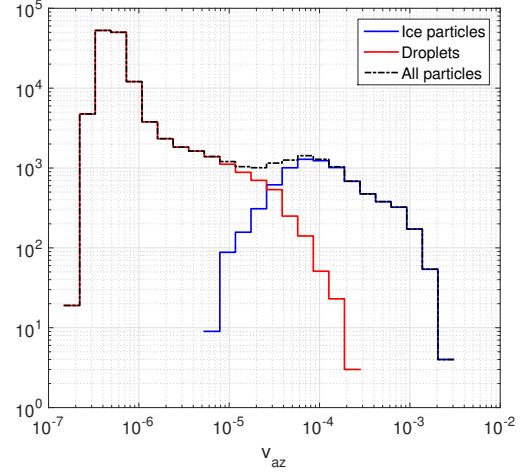
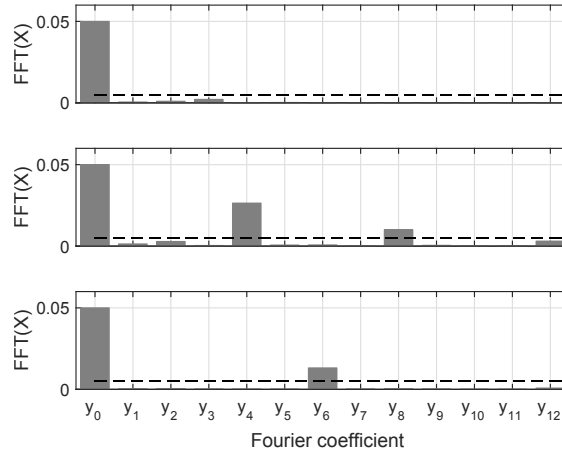


(a) Supplementary figure 1: Example images recorded by the SID-3 during CLACE 2013 from 16:00 24/02/2013 till 04:00 25/02/2013 UTC. Left column: Patterns classified as irregular. Right column: Patterns classified as pristine.



(b) Supplementary figure 2: Histogram of the azimuthal variance values of all particles, droplets and ice particles recorded from 16:00 24/02/2013 till 04:00 25/02/2013 at the Jungfraujoch. The time series is displayed in Fig. 13. and variance as a function of particle diameter in Fig 15.



(c) Supplementary figure 3: Result of the Fourier analysis of the azimuthal intensity profiles of the scattering patterns displayed in Fig. 1. Top: Fourier analysis of the irregular ice particle (Fig 1 b)). Middle: Fourier analysis of the columnar ice particle (Fig 1 c)). Bottom: Fourier analysis of the hexagonal ice particle (Fig 1 d)). The dotted line indicates the threshold for a maximum.