Dust activities near the dawn terminator on 67P/Churyumov–Gerasimenko observed by Rosetta/OSIRIS

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High-resolution images obtained by the OSIRIS camera on board Rosetta spacecraft have revealed dust activities happening close to terminators on the nucleus of comet 67P/Churyumov-Gerasimenko. While activities observed beyond dusk terminator in the night side are considered being sustained by subsurface thermal lag [1], those observed by the dawn terminator might be connected to the sublimation of water ice accumulated on the surface through re-condensation process during night [2,3]. In this study we present pre-perihelion observations of dust emission observed shortly after local sunrise. We investigate the location of these activities as well as their relation with local topography. A generic thermal-physical model will be applied to examine the feasibility of re-condensed ice on the surface being the source of such activities.