

## **Control parameters of the martian dune field positions at planetary scale: tests by the MCD**

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The surface of Mars is occupied by more than 500 dunes fields mainly located inside impact craters of the south hemisphere and near the north polar cap. The questions of the activity of martian dunes and of the localization of the martian dune fields are not completely solved. It has been demonstrated recently by image observation and image correlation that some of these dune fields are clearly active. The sand flux of one of them has been even estimated. But there is no global view of the degree of activity of each the dune fields. (2)The topography of impact craters in which dune fields are localized is an important factor of their position. But there is no consensus of the effect of global atmospheric circulation on dune field localization. These two questions are addressed using the results of Mars Climate Database 5.2 (MCD) (Millour, 2015; Forget et al., 1999). The wind fields of the MCD have been first validated against the observations made on active dune fields. Using a classical transport law, the Drift Potential (DP) and the Relative Drift Potential (RDP) have been computed for each dune fields. A good correlation exists between the position of dune fields and specific values of these two parameters. The activity of each dune field is estimated from these parameters and tested on some examples by image observations. Finally a map of sand flow has been computed at the scale of the planet. This map shows that sand and dust is trapped in specific regions. These regions correspond to the area of dune field concentration.