Electric activity and dust lifting on Earth, Mars, and beyond

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***Abstract*— The physics of dust lifting on Earth, Mars, Venus, the Moon, and asteroids is reviewed with focus on the role of electrostatics. We show that saltation, the process by which wind-blown sand bounces along the surface, kicking dust into the air, generate large electric fields. These electric fields lower the threshold wind stress required to maintain saltation and ionize the atmosphere, producing important chemical reactions. Finally, we present evidence that electrostatics play a key role on dust lifting and transport on the Moon and asteroids.**