A Combined Explanation for the Sailing Stones in Death Valley, California and the Laguna del Altillo Chica, Spain

Spanke, Ronja (School: Hans Thoma Gymnasium)

The phenomenon of the Sailing Stones refers to grinding tracks in the clay with stones at their end. The most common place showing this phenomenon is the Racetrack Playa in Death Valley California. A different location is the laguna del Altillo Chica in Spain. Both moving mechanisms were described differently. Because I know the sailing stone of Racetrack Playa from a former visit, I wanted to compare both location and have a closer look at the different movement mechanisms. Is it possible to transfer the declaration from one place to another? I visited the laguna del Altillo Chica in summer and winter time to do field experiments. From environmental information services I collected geo data from both places. I used this information to prove a self develop physical model in friction and wind tunnel experiments. I was able to prove by observations (climate, stone size), measurements (friction coefficient, freezing points, wind tunnel) and theoretical considerations (movements of blocks) that both movement mechanisms can occur at both locations. So I was able to combine the two controversially discussed explanations. However, the preferred mechanism depends only on the geographical conditions. But climate change is making it harder for the stones to sail. Can the sailing stones stop global warming before the global warming stops the stones from sailing? The stones themselves cannot, of course, stop climate change, but the statement that there will be soon no more sailing stones in the world, is an eye opener for the people to act sustainably.

Awards Won:

American Meteorological Society: Certificate of Honorable Mention

NASA: Honorable Mention