

BURNING QUESTION

BY DEREK SMITH

Q. WHAT MAKES THE SANDS OF LAKE MICHIGAN SING?

A. Put this question to Franco Nori, and the answer is short and sweet: “friction among grains.”

“When chalk is rubbed against a blackboard, it can produce squeaking noises,” says the professor of physics at the University of Michigan, Ann Arbor. “That’s the same reason why sometimes compressed sand sings.”

The mysterious sound emanating from Lake Michigan’s sand dunes has perked the ears of

beachgoers for years. From W.D. Richardson’s 1919 article “The Singing Sands of Lake Michigan,” to Nori’s own research on

sound-producing sand, the effect is regarded by scientists as a natural phenomenon.

But singing? Really? With “sing” being the operative word, the noise resembles more of a whistling sound. Keep your ears alert for a high-frequency squeak that rings in at 1,000 to 3,000 Hz and lasts less than a quarter of a second. The smooth, rounded quality of the lake’s quartz sand provides the perfect acoustic conditions. When pressure – from the foot of a strolling beachgoer, for instance – forces the grains to rub together (the technical term is compression-induced shearing), the friction produces the sandy serenade.

Although sands sing best when they are arid, your best chance of hearing a squeak is immediately after the sand has been moistened by water and then dried. There’s a debate over why recently washed sands sing more readily, but it’s likely that the looser packing of the grains makes it easier for them to rub together.

So, let the melodies of the sand carry the tune on your next beach outing. *Send your Burning Question to: burningquestion@lakemagazine.com.*



©iStock.com/JOAN VICENT CANTÓ