

# THE LOH DOWN ON SCIENCE

Weekdays 5:49 a.m. and 9:04 p.m.  
with Sandra Tsing Loh

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## Math for Cows

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How do you know when cows are happy? They act like sheep!

This is Sandra Tsing Loh with the Loh Down on Science, and a new study on bovine behavior from, who else, mathematicians.

It's true. Serious science goes into understanding collective behavior, from schooling fish to flocking birds - and, now, cattle.

Cowhands know cattle like to be in synch, eating, chewing their cud, or resting.

But how they decide to synch up isn't clear. So mathematicians from Oxford and Clarkson universities decided to try modeling cow synchronization. The trick? Adding enough details for realism, without sacrificing simplicity.

Since cows either stand up to eat, or lie down to rest, the team modeled them as oscillators. That's physics speak for cycling between two modes. The oscillators were assumed to be coupled--with the phase of one influencing others.

The model was run ... And ... Oddly ... showed that the more tightly the oscillator-cows were coupled, the less synchronized they were. So maybe the model is too simplistic. Or ... cows are more complicated than they seem!

In any case, I guess sometimes mathematicians find there is a limit to their cowculations! Sorry.

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