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This Week

Research Notes

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Letters

Surfing dolphins

Wildlife physiologist Terrie Williams may have "long wondered why dolphins sometimes travel in bow wakes" ("Drafting dolphins ride the wakes with ease," SN: 3/7/92, p.149), but a lot of the rest of the scientific community had it figured out a long time ago.

As graduate students 20 years ago, Steve Kline and I tested the pressure gradient explanation by building a scale-model generic dolphin shape that could "swim" along a horizontal wire just below the surface of the water in a wave tank. We made steep narrow-spectrum waves that looked like bow wakes and accelerated the dolphin model with a tow carriage until it caught a wave. We could then stop the carriage and the model stayed with the wave for 30 meters or so to the end of the tank. In spite of the considerable friction of the wire, the dolphin model needed no other energy input. After we calibrated out the wire friction, we were able to predict where in the wave the model would ride — higher waves allowed the dolphin to be farther behind the front face. We were able to predict quite accurately at what wave height the model would be unable to surf.

Richard J. Seymour
La Jolla, Calif.

Tails vs. trails

Present theory dictates that meteor showers are a result of the Earth passing through dust tails formed by sublimation of a comet's nucleus as it journeys through our solar system. The primary constituents of these visible tails are infinitesimal dust specks; many of these minute particles would reenter our atmosphere completely unnoticed.

Given the new information presented in "Comets: Mudballs of the Solar System?" (SN: 3/14/92, p.170), it is more likely that our planet is, in fact, passing through the dust *trails* outlined in your article. These centimeter-size particles would certainly explain the magnificence of such showers as the Perseids.

Kevin L. Starnes
Editor, THE COLORADO SPACE REPORT
Denver, Colo.

Beadblasting

William Jewell and his colleagues are to be congratulated on the bioremediation of PCEs and TCEs by way of a two-stage reactor ("Microbes to sup at Superfund sites," SN: 3/14/92, p.175). Our experiments show that two-stage remediation also works on methylene chloride and residue from paint stripped from aircraft.

Another means of stripping aircraft is the use of plastic media blasting (PMB), which is somewhat like sandblasting, but using plastic beads rather than sand. Our experiments in remediating the residue from this process indicate that a *three*-stage reactor is the way to go. In the first stage, polyurethane and epoxy paint are digested. In the second, Type 5 plastic and residual polyurethane paint are digested. In the third, residual Type 5 and to some extent Type 2 plastic are digested.

The advantage of the multistage approach is the bioremediation of a complex waste.

Gail Bowers-Irons
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