SCIENCE NEWS Online
THE WEEKLY NEWSMAGAZINE OF SCIENCE

Print Article
E-mail Article

Week of April 24, 2004; Vol. 165, No. 17 , p. 269

Particle breakdowns beat expectations

Peter Weiss

A type of disintegration of subatomic particles called kaons occurred more often than anticipated in two series of accelerator experiments performed between 1989 and 2002 at Brookhaven National Laboratory in Upton, N.Y. This intriguing new finding, based on limited data, hints that the experiments had tapped into previously unseen types of subatomic behavior, researchers say.

Kaons are short-lived particles that decay in various ways. The type of decay sought in these experiments is one of the rarest. In the studies of such decays at Brookhaven since the late 1980s, physicists there created kaon beams and observed the particles' fates using house-size detectors. The leading theory of particle physics had predicted only one of the extremely rare kaon decays in the first series, but two instances of the decay occurred, says Steven Kettell, a spokesman for the more recent series of experiments. Now, an analysis of data from that series reveals that yet another instance of the decay took place. The finding was announced March 23 at a Brookhaven colloquium.

One explanation for the extra instances of the decays may lie in an alternative theory called supersymmetry, which posits yet-undiscovered particles that could account for the disintegrations. With only three observations of the kaon breakdowns, however, it's possible that the result is merely an anomaly, Kettell notes.

No new kaon data are likely to come from Brookhaven anytime soon. In 2002, the U.S. Department of Energy shut down the second series of kaon experiments after only a fifth of its planned run. While the new results are exciting, Kettell says, they're also a painful reminder to kaon physicists of what they are missing.

If you have a comment on this article that you would like considered for publication in *Science News*, send it to editors@sciencenews.org. Please include your name and location.

Subscribe Today! click here
Subscribe to *S*
News.
Click OR c
1-800-552-4
audible.com
Subscribe to *S*
News in an a
format.
NEW! Free E-mail Alerts
Science Ne
e-LETTEI
Science Mall Shopping
Shop at the Sc
Mall.
SCIENCE NEWS LOGO MERCHANDISE
Click Here, ORDER TODAY
Caps, Mugs, Sweatshirts, Mousepads Bags, T-Shirts, and MORE!
Science Ne
Logo Wea
Request Permission To Reuse Content
Copyright Cle
Center
Smithsonian

Browse a *Sci*
News photo col

References and sources for this article

References:

2004. Physicists see golden needle in a micro-cosmic haystack. Brookhaven National Laboratory news release. March 23. Available at http://www.bnl.gov/bnlweb/pubaf/pr/2004/bnlpr032304b.htm.

Sources:

Steven Kettell
Brookhaven National Laboratory
Upton, NY 11973-5000

From Science News, Vol. 165, No. 17, April 24, 2004, p. 269.

Copyright ©2004 Science Service. All rights reserved.
1719 N St., NW, Washington, DC 20036 | 202-785-2255 | scinews@sciserv.org