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SLAC today

Thursday - October 26, 2006

Computer Security: PII and the Importance of Permissions

Permissions can be set by right clicking on folders saved to the Z drive and selecting the "properties" option.

by Brad Plummer

You have heard the security buzz about managing personally identifiable information (PII) and how to prevent identity theft. (A list of information that constitutes PII can be found here.) Previously, we addressed the definition of PII and the need to keep it off portable devices. Removing the PII from one's possession by transferring it to centrally managed file servers, such as the Z drive or Andrews Files System (AFS) home directories, is a crucial first step. But once PII is moved to central file systems, you still need to set the appropriate file system permissions to ensure the information within your control is not publicly accessible.

"This is an evolving issue, and recommendations most likely will change over the next few months as we learn more, and develop new guidance," says SLAC computer security team member Heather Larrieu. "In the

meantime, it's important to minimize the gathering of PII in our processes and procedures and to set the appropriate permissions for files stored on the network drives."

The central Z drive is accessible to all Windows users working at SLAC. By default, the security settings for these files are set so that only the owner and administrators have access unless permissions are manually changed. Read more...

Science today

Particles Spin Mysteriously through the BaBar Detector

by Andrei Gritsan

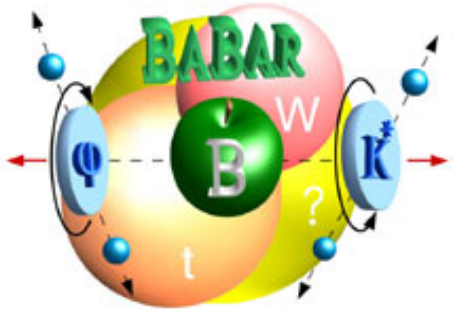

Image courtesy of BaBar physicist Andrei Gritsan, professor at Johns Hopkins University

Imagine an everyday apple falling into two pieces each with the mass of an elephant. Impossible, says conservation of energy and common sense. However, due to the Heisenberg uncertainty principle in quantum physics, an equivalent process is possible at a small quantum level if it happens fast

Photo: Mariachi Garibaldi

Click on image for larger version.

Mariachi Garibaldi played at the Linear Café yesterday in honor of the café's completed renovation, making lunch-goers smile at its lighthearted sound.

SESAME to Open: Particle Accelerator Spurs Middle East Science Partnership

by Clara Moskowitz,
Stanford Report

About 19 miles northwest of Amman, Jordan, this building will

Events (see all | submit)

- October 31: (12:30 p.m.) Experimental Seminar: The LSST and Experimental Cosmology at SLAC/KIPAC

Access (see all)

- Building 40 Construction
- Sector 10 Alignment Vault Access Road / North Gallery Utility Roads
- Bldg 084 GLAST ISOC Facility Construction
- Bldg 084 Parking Spaces Closure
- Alpine Gate & PEP Ring Road Closed
- Gates 17 & 30 Open 24-7
- Research Yard Bisected

Announcements (see all | submit)

Lab Announcements

- LCLS Animation Available for Download
- HR Training Needs Assessment
- Register for the GLAST International Science Symposium

Community Bulletin Board

enough and the two pieces collapse quickly into something lighter.

Physicists on the BaBar experiment exploit this quantum effect every day. They observe a virtual decay, also called a penguin loop, of a b-quark into the about 50-times heavier t-quark and W-boson, which collapse quickly into lighter quarks. This quantum trick allows scientists to produce the heaviest known elementary particles for a short instant. Even more intriguing is the possibility to create new undiscovered particles this way. This is why BaBar physicists search for ways to learn about the short instant during which the virtual penguin loop occurs.

One method is to exploit the spin of the particles that emerge when a B meson decays into two "vector" mesons, each with one unit of quantum spin. Imagine a flying frisbee which suddenly breaks apart; the debris is more likely to fly in the plane of the frisbee's rotation. The angular distribution of the debris allows physicists to determine the direction of the vector-meson spin.

Through this observation, BaBar physicists learn how the virtual loop affects the spin of the two vector mesons ϕ and K^* created in a B decay. It came as a big surprise that the amount of spin along the vector meson direction of flight far exceeded any expectation. Physicists around the world scratched their heads and could not agree on an explanation of the BaBar discovery. Several plausible proposals were on the table, including ones postulating new fundamental particles, but most of the ideas contradicted each other.

BaBar Physicists have now proposed replacing one vector meson with the

house a new particle accelerator. Read more about SESAME in *symmetry*.

When Stanford physicist Herman Winick heard that Germany was planning to throw out an old particle accelerator, he thought, why not donate it to the Middle East? This idea has sparked plans to build a new state-of-the-art research facility in Jordan using pieces of the old German equipment. The lab will speed up electrons in a circle to produce high-energy light called synchrotron radiation, which is useful for a host of experiments. The project's leaders hope that the new facility will help solve important scientific questions and bring together researchers from different parts of the region.

"My main motivation is to help create a project in which people can work constructively and collectively," Winick said. "There will be collaborations between Israeli and Arab scientists, in particular. This is reasonably unusual." Previous cooperation has been bilateral (between just Israel and Palestine, for example). This is the first time that scientists from many different Arab nations, along with Israel, will all work together, he explained. Read more in the *Stanford Report...*

Two-day Science Festival Returns Nov. 4

by Clara Moskowitz,
Stanford Report

- 35th Annual SLAC Run & Walk
- Flu Shot Availability
- Change a Light Pledge: Your Pledge Counts!

News (see all | submit)

- Researchers Make Important Advancement in Unraveling Mysteries of Fusion Energy PhysOrg.com
- Berkeley Lab Gets $13 Million in Grants from HHMI and NIH to Speed Crystal Structure Solutions Lightsources.org
- Hubble Yields Direct Proof Of Stellar Sorting In A Globular Cluster Science Daily

- Flea Market
- Linear Café Menu

so-called "tensor" meson, which has two units of spin instead of one. They have just announced the discovery that, contrary to the vector meson, the tensor meson has very little spin along its flight direction. Most physicists expected the same behavior from both particles. This was a big step forward in resolving the mystery of the penguin loop, but questions remain: What happens during the penguin loop instant? What spins the vector meson along its direction of flight but not the tensor meson?

Physicists on BaBar are optimistic that they can answer these questions and many others in the energy frontier made possible by the uncertainty principle.

The Sombrero Galaxy M104 is 28 million light-years from Earth.

Is the world made of strings? Can we stop the human aging process? These questions and many more will be presented at Wonderfest, an annual two-day science festival returning the weekend of Nov. 4-5 to the campuses of Stanford University and the University of California-Berkeley. Admission is free and open to the public.

Stanford will host Wonderfest on Saturday, Nov. 4, from 1 to 10 p.m. at the Hewlett Teaching Center. The festival moves to UC-Berkeley's Andersen Auditorium on Sunday, Nov. 5, from 10 a.m. to 5 p.m. Read more in the *Stanford Report*...

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