

we might be able to mitigate the problem.”

The only solutions, suggests Kintner, are to equip receivers with weak signal-tracking algorithms or to increase the signal power from the satellites. Unfortunately, the former requires additional compromises to receiver design, and the latter requires a new satellite design that neither exists nor is planned.

“I think the best remedy is to be aware of the problem and operate GPS systems with the knowledge that they may fail during a solar flare,” says Kintner.

The team was initially confused as to why the flare had caused the signal loss. Then Kintner recalled that solar flares are accompanied by solar radio bursts. Because the bursts occur over the same frequency bands at which GPS satellites transmit, receivers can become confused, leading to a loss of signal.

Had the solar flare occurred at night in Puerto Rico or had Cerruti been operating SCINTMON only at night, he would not have made the discovery.

“We normally do observations only in the tropics and only at night because that’s where and when the most intense ionospheric irregularities occur,” says Kintner. However, since no one had done it before, Cerruti was looking at “mid-latitudes” (between the tropics and the poles), where weaker irregularities can occur both night and day. As a result, SCINTMON detected the solar flare.

Cerruti reported the findings on September 28 at the Institute of Navigation Meeting in Fort Worth, Texas, where he received the best student paper prize. The full results of the discovery will be published in a forthcoming issue of *Space Weather*. Other authors of the paper include D.E. Gary and L.J. Lanzerotti of the New Jersey Institute of Technology, E.R. de Paula of the Instituto Nacional de Pesquisas Espaciais and Cornell research associate Hien Vo.

EMC 2007: Launch of The Global EMC University

By Janet O’Neil, EMC 2007
Steering Committee Chair

At the 2007 IEEE International Symposium on Electromagnetic Compatibility (EMC 2007) in Honolulu, Hawaii, a new educational course will debut: The Global EMC University.

The goal of The Global EMC University is to provide in depth, applied, and practical material to those new to EMC. The course was designed to provide a solid foundation on important EMC topics to the practicing EMC engineer, presented by well-known EMC experts from universities or institutions around the world. These experts regularly gather at the annual IEEE EMC Symposium. For the first time, under the leadership of **Professors Clayton R. Paul** of Mercer University in Macon, Georgia and **Flavio Canavero** of the Polytechnic of Turin, Italy, these experts will share their knowledge following a structured agenda in a classroom type format.

The course curriculum includes:

- Professor Clayton Paul - Use of PSPICE in Solving EMC Problems
- Professor Flavio Canavero - Signal Spectra
- Professor Todd Hubing - Nonideal Behavior of Components
- Professor Mark A. Steffka - Conducted Emissions and Power Supply Filters
- Professor Andy Marvin - Antennas
- Professor Tom Jerse - Radiated Emissions
- Professor Christos Christopoulos – Shielding
- Professor Antonio Orlandi - Crosstalk
- Professor Kye Yak See - PCB Layout and System Configuration for EMC
- Dr. Al Ruehli - Transmission Lines and Signal Integrity

Nowhere else will one find these noted instructors in one place at one time for EMC education at this level!

Certificates of completion will be awarded and CEUs will be assigned; class size will be limited to ensure interaction with the speakers. Those that wish to attend should register early via the website www.emc2007.org. Registration opens January 5.

JOIN US FOR THE CONTINUED EDUCATION PROGRAM AT EMC 2007 July 8-13



EMC 2007
honolulu, hawaii



New for the EMC Symposium is the "Global EMC University"

Recognizing the need for low cost, high quality education on EMC, the Global University was developed to provide tutorials with Continuing Educational Unit credits. (CEU's) Nowhere else will one find these noted experts from all over the world in one place at one time for EMC Education at this level.

Registration Fee: \$250.00
before May 14 and receive a **FREE Global University Cap,**

Registration after May 14: \$350.00

Attendance is limited, sign up early
Registration to EMC 2007 is required
In addition to the GU Class Fee.



Through Education, Networking & Celebration



Students will be admitted on a first come, first served basis until the class is full. Note regular registration is required for the symposium in addition to a supplemental registration for The Global EMC University.

Students are encouraged to attend the annual "Fundamentals of EMC" full day tutorial on Sunday, July 8 held as part of the Symposium regular technical program. The Global University officially starts with a full day on Monday, July 9, followed by morning lectures over July 10-12. The afternoons are free so students may attend the excellent Symposium technical program or visit the exhibition held as part of EMC 2007.

For more information on The Global University, including topic outlines and speaker biographies, as well as on the 2007 IEEE International Symposium on EMC, please visit www.emc2007.org.

Editor's Note:

NARTE is delighted to support the Global University. We will run our Workshop in conjunction with the "Fundamentals of EMC" tutorial on Sunday, July 8. As a result, all GU students and other attendees can be prepared for the NARTE EMC Certification Examination, should they wish to complete this phase of NARTE Certification during EMC 2007. The NARTE Certification Examination consists of two four hour sessions, which will run consecutively on Saturday, July 14.

All Certification applicants are requested to register with NARTE as soon as possible. Registration instructions and forms are available from our web site www.narte.org or by calling the NARTE office at 800-89-NARTE. Last minute registration

for the examination may be possible during EMC 2007 by visiting the NARTE booth.

In order to encourage GU students to add NARTE Certification to their portfolio, we will offer a 50% discount for the second year of NARTE membership to all students who take the July 14 examination and subsequently achieve Certification. This is a great way to add an internationally recognized certification of engineering excellence to your cumulative knowledge base and information gained from the GU course materials.

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