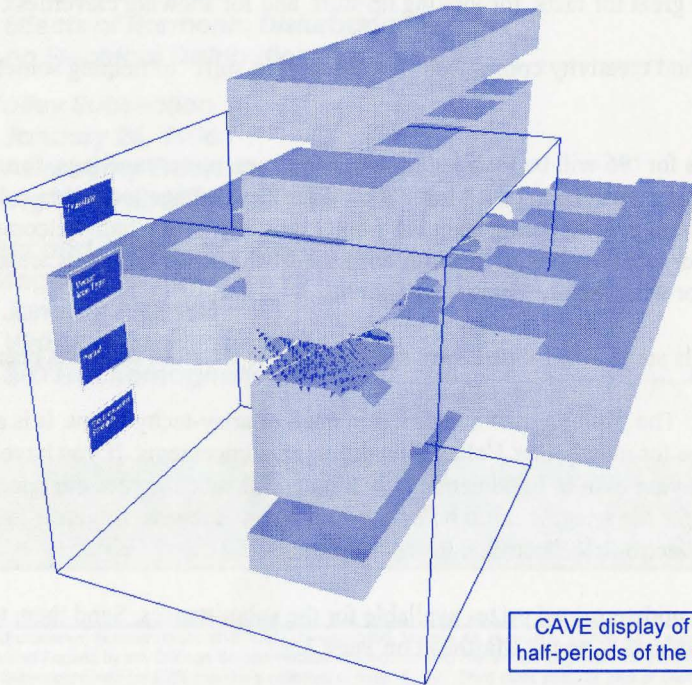




Scanfax

Institute of Electrical & Electronic Engineers  Chicago Section Newsletter

JANUARY 1996



CAVE display of four
half-periods of the EMW.

"Virtual Reality Visualization of 3-D Electromagnetic Fields"

***Inaugural Meeting of the
Nuclear and Plasma Society and
Magnetics Society***

January 25, 1996

Chairman's Message

Happy New Year!

We have been suggesting ways our members can benefit from each other, with the principal emphasis on ways to combat or circumvent technical obsolescence. Several commentators have made strong positions toward encouraging more frequent eyeball contact and less reliance on printed paper or electronic mail, including WEBSites. WEBSites and email are great for facts, for looking up stuff, and for showing cleverness.



Jack Sherman

But learning and creativity comes from "strutting your stuff" or helping somebody else strut theirs.

So the themes for '96 will be found at mini-conferences, mixer meetings, forums, workshops, and networking. Last Month's cited DeVry-DuPage located in Addison for the use of a room every Tuesday evening from 7 to 9 PM. This Chair welcomes suggestions for what to do with this availability, for what other locations are available, and for who or what the presentations might be.

Public Schools and Town Libraries are not available to us, from what has been learned.

Another item: The front page of Scanfax is in need of artsy-techy talent. It is not intended to be the place for mostly Fox Valley Subsection announcements. If you have a child or grandchild of your own or of someone else, it would be nice to grace our space with what has meaning for the artist. It could be Environmental Awareness, Engineer Person Awareness, Electronic - Electronic Power inspired.

There are yet undetermined prizes available for the submittances. Send them to the Editor. The address is on the Masthead on Page 3.

A caricature suitable for the Chairman's Message photo would be a welcome derision.

Regards and high hopes for more gatherings.

Bring your friends. Bring students. Bring 5th graders and up. Disregard the dinners and the dewinderization, come to the presentations.

Jack Sherman, IEEE Chicago Section Chair — j.sherman@ieee.org; iceechi@aol.com

In This Issue:

- **Power Electronics Society and Chicago Section**
January 9, 1996
*A Remote Monitor for Volcanic Gases:
A Design Study in Power Conservation* Page 5
- **Power Engineering Society**
January 10, 1996
Utility Right of Way and Site Selection Page 7
- **Industry Applications Society and
Industrial Electronics Society**
January 24, 1996
*Effects of Harmonic Disturbances
on Electrical Distribution Systems*Page 9
- **Fox Valley Subsection**
January 24, 1996
*Astronomy Enters the Computer Age:
Digitizing 50 Million Galaxies*Page 10
- **Nuclear and Plasma Sciences Society
and Magnetics Society**
January 25, 1996
*Virtual Reality Visualization of
3-D Electromagnetic Fields*Page 11

Chicago Section Executive Committee Meeting
January 9, 1996 • 7:15 PM
DeVry • 1221 N. Swift Road • Addison, IL

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Articles for March '96 Scanfax due January 25. Articles for April '96 due February 22.

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POWER ELECTRONICS SOCIETY AND CHICAGO SECTION

Welcomes You
to an Evening
Presentation

A REMOTE MONITOR FOR VOLCANIC GASES: A DESIGN STUDY IN POWER CONSERVATION

Presented by William Penrose of
Transducer Research, Inc.

Tuesday, January 9, 1996

ABOUT OUR TOPIC

Some vulcanologists believe that eruptions of certain types of volcanoes can be predicted from changes in the composition of the gasses emitted beforehand. Transducer Research, Inc. (TSI) has designed a Volcano Gas Meter (VGM) that can be deployed for extended periods in adverse environmental conditions. It is the size of a large attaché case and is completely self contained. At intervals, the VGM will make a series of gas and physical measurements and transmit these via UHF radio to a remote base station. In the volcanic environment, solar power is out of the question, and so the VGM must operate entirely on batteries. Coupled with the demand for reliability and the physical difficulties of deployment, designing for extreme power conservation puts severe constraints on every phase of the design process.

Two VGM's have been built and deployed for limited periods in Columbia, Indonesia, and Russia. Several data sets have been recovered, but many unforeseen difficulties have been encountered. Some of these have been power-related in spite of the initial design effort, and TRI has developed a specification for the next generation of VGM. This talk shall discuss many of these difficulties and their solutions.

ABOUT OUR SPEAKER

Dr. Penrose has a Ph.D. in Bio-Chemistry from the University of Michigan, Anne Arbor, MI. Over the past 12 years he has been involved in the design and development of chemical sensing equipment at both Argonne National Labs and TRI. He is presently the Head Researcher at TRI, Aurora, Illinois.

PLACE

DeVry - DuPage
1221 N, Swift Road
Addison, IL

TIME

Presentation 8:00 PM
(Immediately Following the
Chicago Section Executive Meeting)

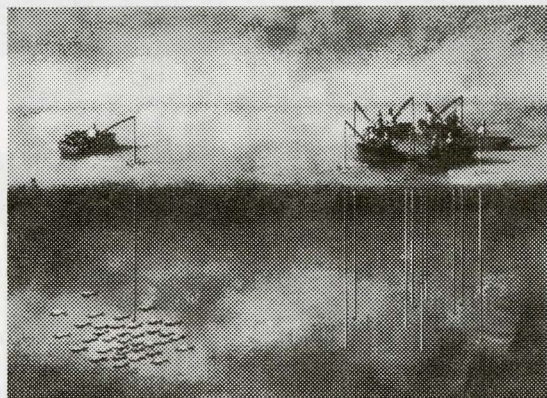
FOR RESERVATIONS

Please make your reservation by calling the IEEE Business Office at (800) 898-IEEE no later than noon, January 9th.

FOR FURTHER INFORMATION

Contact Howard Penrose at (708) 347-8850.

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Welcomes You
to a
Luncheon
Program

UTILITY RIGHT OF WAY AND SITE SELECTION

Presented by
Mark Lorenz
of

Commonwealth Edison

Wednesday, January 10, 1996

ABOUT OUR TOPIC

Over the years the siting of new Transmission lines and substations has exposed many environmental and aesthetic concerns from the public. Recently, wetland issues and EMF have posed the greatest stumbling blocks for engineering in search of the "ideal" alignments and locations for new facilities. As the need arises, ComEd involves the public in the siting process to solicit their input and achieve consensus. The presentation will describe the siting process and the considerations ComEd reviews for impact.

ABOUT OUR SPEAKER

ComEd's siting and estimating engineer in the right-of-way and site selection Department. He is ComEd's expert witness for Line and Substation siting issues before the Illinois Commerce Commission. His team is responsible for preliminary plans and zoning estimation for Transmission and Substation facilities.

Mark has been with ComEd for 15 years, prior to 1989 he held various assignments in Distribution Facilities engineering. Mark graduated from Valparaiso University with BSEE in 1980. He is a licensed Professional Engineer in the State of Illinois, a member of IEEE, the Western Society of engineers and Tau Beta Pi.

PLACE

Chicago Bar Association
321 S. Plymouth Court
Chicago, IL
(Near Jackson and Dearborn)

Lunch tickets can be purchased in the lobby (\$8.50).

TIME

Social 11:30 AM
Lunch 12:00 PM
Presentation 12:30 PM

FOR RESERVATIONS

Please call the IEEE Business Office at (800) 898-IEEE to make your reservation no later than noon, Monday, January 8th.

FOR FURTHER INFORMATION

Contact Sam Peach at (708) 955-2537.

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to a
Dinner Program

EFFECTS OF HARMONIC DISTURBANCES ON ELECTRICAL DISTRIBUTION SYSTEMS

Presented by
David Shipp of Westinghouse

Wednesday, January 24, 1996

ABOUT OUR TOPIC

Please join us for a presentation on the effects of harmonic disturbances on electrical distribution systems.

ABOUT OUR SPEAKER

Mr. Shipp works for Westinghouse Engineering Services Division. He was the chairman for the Harmonic Analysis Studies, NSI 399, chapter of the BROWN book in the IEEE color series.

PLACE

Como Inn
546 N. Milwaukee Ave.
Chicago, IL

TIME

Social 5:30 PM
Dinner 6:00 PM
Presentation 7:00 PM

DIRECTIONS

From the North: Take 90/94 to Ogden Avenue exit. Turn left onto Ogden to Milwaukee Avenue. Turn right on Milwaukee and proceed south. The Como Inn is located just over the expressway.

From the South: Take 90/94 to Lake Street exit. Turn left on Lake to Halsted Street. Turn right on Halsted to Milwaukee Avenue. Turn left on Milwaukee to the Como Inn.

Parking: Two large free self park lots are available or valet service at the Como Inn entrance on Ohio Street.

NOTES

Dinner will cost \$20. You will have a choice of a Chicken or Pasta entree.

FOR RESERVATIONS

To make your reservation, call the IEEE Business Office at (800) 898-IEEE.

FOR FURTHER INFORMATION

Contact Pat Hennelly at (708) 398-4510.

**FOX
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SUBSECTION**

Welcomes
You
to an
Evening
Program

ASTRONOMY ENTERS THE COMPUTER AGE: DIGITIZING 50 MILLION GALAXIES

Presented by
Fritz Bartlett of Fermilab and
Astrophysical Research Consortium

Wednesday, January 24, 1996

ABOUT OUR TOPIC

One of the most ambitious astronomy projects ever mounted is now underway, utilizing a unique telescope in New Mexico, and directed, in large part, from Chicago. The Sloan Digital Sky Survey, a project overseen by a consortium of universities including the University of Chicago, will spend five years to photograph and catalogue one-quarter of the celestial sky. Images for approximately one-hundred million stars, one-hundred million galaxies and one-hundred thousand quasars, visible across the northern galactic cap, will be digitally collected and stored.

The telescope uses charge-coupled detectors, or CCD's, and wide-angle technology which scans in an unusual fashion to save time. The data to be generated — up to ninety gigabytes per viewing night, enough to fill eight million floppy disks by the Survey's conclusion — will be sent to Fermilab for computer analysis.

Fritz Bartlett, with the Fermilab team, will tell us about the hardware and software challenges for this unique project.

PLACE

**Jerry Sharko's
2225 Ogden Ave.
Lisle, IL**

TIME

**Social 6:00 PM
Dinner 7:00 PM
Presentation 8:00 PM**

NOTES

Dinner costs \$15.00 per person and the presentation is free. Dinner menu includes Garden Salad, Dinner Rolls, Family Style Entree, Coffee, and Dessert. Dietary and vegetarian meals can be requested when you make your reservation.

FOR RESERVATIONS

Please call the IEEE Business Office at (800) 898-IEEE to make your reservation.

FOR FURTHER INFORMATION

Contact Howard Penrose at (708) 347-8850.

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to an
Evening Program

VIRTUAL REALITY VISUALIZATION OF 3-D ELECTROMAGNETIC FIELDS

Presented by
Dr. Larry Turner of
Argonne National Laboratories

Thursday, January 25, 1996

ABOUT OUR TOPIC

Even with the Computer Graphics capabilities of modern commercial codes for computing magnetic fields, it is difficult to visualize the results of 3-D field computations. The CAVE Virtual Reality System at Argonne National Lab allows interactive, stereoscopic viewing of representations of magnetic fields, for example those of the Elliptical Multipole Wiggler, an insertion device in the Advanced Photon Source at Argonne.

ABOUT OUR SPEAKER

Dr. Larry Turner has a Ph.D. from Carnegie-Mellon University. For the past twenty years he has carried out electromagnetic field analysis for superconducting magnets, particle accelerators, fusion, and steel production at Argonne National Lab.

PLACE

**Jerry Sharko's
2225 Ogden Ave.
Lisle, IL**

TIME

**Social 5:30 PM
Dinner 6:00 PM
Elections 7:00 PM
Presentation 7:30 PM**

DIRECTIONS

Exit I-355 at Ogden Avenue and head west approximately two miles.

NOTES

Chapter elections will be held prior to the presentation. Dinner costs \$15.00 per person and the after dinner activities are free. Dietary and vegetarian meals can be requested when you make your reservation.

FOR RESERVATIONS

Please call the IEEE Business Office at (800) 898-IEEE to make your reservation.

FOR FURTHER INFORMATION

Contact Tom Jurgens at (708) 840-4803, t.jurgens@ieee.org



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