Society Chapter Meetings

Joint Boulder-Denver APS/MTTS/GRS - Antennas and Propagation, Microwave Theory and Techniques, Geoscience and Remote Sensing
Date: Thursday, October 18, 1988
Place: National Bureau of Standards
325 Broadway, Boulder, Room 4020
Time: 4:00 - 5:00 pm
Speaker: Dr. Gary Olhoeft, U.S. Geological Survey, Denver, Colorado
Topic: "Electromagnetic Tomography"
Time-domain electromagnetic propagation measurements between two boreholes yield several kinds of information about the media between the holes. The ray-path distance divided by the propagation first-time-of-arrival is velocity. The reciprocal of the product of first-arrival amplitude times ray-path distance is proportional to attenuation. The change in shape of the wavelet is a measure of dispersion. Dispersion is the change in frequency content of the wavelet with propagation distance. The velocity primarily represents changes in bulk density and water content. The attenuation primarily represents changes in fracture density and water content. The dispersion primarily represents changes in scattering. Back projection reconstruction techniques allow tomographic velocity, attenuation and dispersion contour sections to be produced. Increased fracture density appears as increased attenuation and decreased velocity with little or no change in dispersion. The presence of an air-filled mine tunnel appears as an increase in velocity, attenuation, and dispersion.
Contact: Bob Seeley, Fortress Electronics, 986-6790.

Joint PES/IAS - Power Engineering Society/Industry Applications Society
Date: Thursday, October 20, 1988
Place: Jones Intercable Corporate Headquarters, 9697 E. Mineral Avenue,
Englewood, Colorado
Take County Line Road Exit off I-25, turn West to Chester, turn North to East Mineral.
Time: 6:30 pm
Note: No dinner meeting.
Topic: Tour of cable TV operations, including studio and galactic radio facility.

Joint VTS/COMSOC - Communications Society/Vehicular Technology Society
Date: Wednesday, October 12, 1988
Place: MCI Division Headquarters
707 17th St. Suite 4200 (Arco Tower)
Denver, Colorado
Time: 6:30 pm - Complimentary hors d'oeuvres, courtesy of MCI
7:30 pm - Program
Speaker: Gene Warren and Pat Moran
Topic: "T-1 Networks and ISDN"
Contact: Reservations requested. Call John Hardzinski, 977-2224 (w), 693-2198 (h) or Ken Shugg, 977-2226.
Advance Meeting Notice
Date: November 9th or 10th 1988
KDVR Channel 31

Please cancel your reservations if you are unable to attend a meeting. No-shows will be responsible for the cost (if any) of dinner.
Date: Thursday, October 20, 1988
Place: Dinner - (Optional from the Menu) Jose Muldoon's, 38th and Arapahoe, Boulder, CO
U.S. 36 to Foothills Highway Foothills Highway to Arapahoe, West on Arapahoe to J.M. (on right).
Program - Cray Research Inc., 3375 Mitchell Lane.
From Denver: U.S. 36 to Foothills Highway, Foothills Highway to Valmont, East on Valmont to 47th, North on 47th, East at the light onto Mitchell Lane.
Time: Dinner - 5:30 pm  Program - 7:00 pm
Speaker: Cassandra Shaw
Topic: "Cray Supercomputing -- Architecture and Applications"
Contact: Reservations required, space limited. Please call Rory Laiho, 924-7534, or Sandy Bish, 538-4717.

Computer Society/Information Theory Society

I would like to briefly introduce you to the activities of the Joint CS/IT Societies in the Denver area.

We typically sponsor monthly meetings on a variety of software/hardware topics. In addition this year, we are co-sponsoring the entire Satellite Videoconference series. See the enclosed flyers for topics and mark these dates on your calendars!

The First Videconference will be on October 4. This is a prime annual event and promises to be of interest to a broad range of engineers in the computer field. Our other principal activity is the co-sponsoring of Professional Development Seminars with several other professional societies in the area. You will receive mailings at your home as these become available.

Monthly meetings are generally the 3rd Thursday of each month. We try to vary the location and content to accommodate the broad interests of our membership.

This chapter can only be as successful as the energy level of the volunteers that keep it going. Many thanks for the untiring efforts of the officers and volunteers.

Current officers are:
Sandy Bish Chairperson
Rory Laiho Vice Chairperson
David Ho Secretary
Vacant Treasurer
Malcolm Gillespie Program Committee
Ed Seely Program Committee
I would like to encourage your suggestions and topic requests. If there are not providing the services you expect, let us know! Please call me if you would like to discuss our activities, sponsor one of our meetings, or find out what you can do to help out. Some volunteer opportunities require only a few hours of effort.

Call Sandy Bish, (303) 538-4717.

Dan Michaels, Chairman Pre-College Student Activities Receives USAB Award.

The Regional Division Professional Award presented by the IEEE United States Activities Board (USAB) was awarded to Dan Michaels for his outstanding work in establishing the Science Olympiad Program. Dan is one of six individuals who are honored with this professional activities award. Congratulations Dan!
Charles Wright, a historian familiar with the region's precedent-setting development of electricity, likes to tell an anecdote about some of the trials and tribulations of running the Ames Power Plant - one of the world's first hydroelectric stations.

The biggest problem for those operating the plant was not the water but the lightning striking the plant during those few days of summer thunderstorms. As a result, the operators needed lightning arresters, so they developed one of the most successful - a tub of salt water that grounded the power lines," he recounted.

"One day during a severe storm," Wright continued, "a bull was drinking out of the tub when lightning struck. Of course, the bull died by electrocution." "That's no bull," he joked.

"It's no bull either that the Ames Plant - located north of Trout Lake at the Ophir Loop - helped make Telluride one of the first municipalities in the U.S. to be supplied with electricity from a distant power source. At the time, Lucien L. Nunn and his brother Pomeroy both researched the possibility of transmitting power over a long distance, a feat never before accomplished. Finally, on June 19, 1897 - 14 years before the first war was real at the Bridal Veil Plant... the two men sent electricity from a generator in Ames to the Gold King Mine near Alta Lakes, a distance of 2.6 miles.

Suddenly, the Colorado mining industry was transformed as new inexpensive electric power replaced the need for coal and timber, and the nascent electrical industry revolutionized as alternating current (AC), championed by Ralph Westinghouse, replaced direct current (DC), advocated by Thomas Edison, as the most viable method of transmitting electricity over distances.

And now, 97 years later, the plant is being commemorated as a "Historical Electrical Engineering Milestone," by the IEEE.

"The Ames Plant is the first AC generating plant to be used for industrial purposes," Wright noted. "Everything that had been DC." Wright, a retired Public Service of Colorado employee, pointed out that the design of the Ames Plant later became instrumental in helping design a similar, much larger, facility at Niagara Falls, New York. He noted that although the Ames Plant may have been the first in the world to generate AC for commercial purposes, the milestone will only be credited as being a major contribution to the development of electricity.

"There were other things going on in Europe at the same time," Wright said. "The first plant became operational in August, 1891.

Plus, he noted that a plant in Williamette Falls, Oregon, near Portland, actually generated electricity before the Ames Plant, but was used only for street lighting, not industrial purposes.

Not having been put to rest during its 97-year history, the plant is still active in generating electricity. Larry Day, a vice president of Colorado-Ute Electric Association, the current owners of the plant... explained, "The plant is operating at full capacity now," generating three to four megawatts of electricity.

The power generated by the plant is part of the integrated system grid maintained by Colorado-Ute and other utility companies throughout the west. The Ames Plant's power may be serving as far north as Canada and as far south as the lower Baja Peninsula, Day noted.

At the moment, Colorado-Ute is in the process of completing work at the Trout Lake Dam, the source of water for the plant... The water level at the lake has been lowered, Day explained, to put in a drain in the face of the dam. "We should have the work completed within one month," he said.

While some maintain that the existing plant at Trout Lake will be used, Wright noted that the first plant operated for only six years, and used water pumped in from Howard's Fork of the San Miguel River. The plant then succeeded by the so-called Old Ames Plant, which has also been replaced.

"The plant that is there now was built before 1907," Wright wrote. "I don't know the exact date. This is the third one that has existed on the site."

Similar to the workings of the Bridal Veil plants, which lie in the Ivanhoe and the Purgatory Rivers, the Ames Plant generated electricity using pressure created by water that is carried in pipes from Trout Lake.

The pressure and the volume of the water control the amount of electricity generated," explained Day.

Chairman's Message

By Mike Foley

Section Financial Report. The Section general fund has cash reserves which are about equal to the annual budget of $3,000. The main source of funds for the Section is the membership rebate from headquarters, while the major expense is the publication of the newsletter, the ROCK IEEE Overlook.

The Section Executive Committee is asking all members to help identify prospective corporate supporters of the newsletter. Support may be in the form of placing a corporate advertisement in each issue of the Overlook, which may be providing a publishing service for the Overlook which is either donated or at a nominal cost. Such services would be typesetting, printing, handling and mailing each issue. The processing of the mailing labels, which are attached to your newsletter, is also needed. Any company that has capability for running computer magnetic tape, formatted data onto mailing labels would be of great assistance to the Section. If you know your company or other entity has these services, please contact Gary Petersen, Vice-Chairman at 692-2680. This is your opportunity to make a contribution to the Section - please give my request your consideration.

November Section Meeting. Your Executive Board is planning a November Section meeting which will be of high interest to all members. Watch the November issue for details.

IEEE Election. By now, you should have received your 1989 ballot for the 1989 President and Vice-President election, as well as the election of the Region 5 Director-elect for 1989.

As you are probably aware, IEEE has adopted the approval voting procedure, which allows you to vote for as many candidates as you feel you would qualify for the position. If you have not been keeping up with the various issues surrounding the election candidate, Erwin Feest, you may rely your vote is very important to the election. Please consider the candidates and vote your choice(s).

Please make a special note that John Martin, of the Denver Section Executive Board is a candidate for Region 5 Director. I personally endorse John's candidacy and believe that he will represent the interest of Region 5 and the Denver Section in your behalf. Please indicate your choice by voting.
THE INSTITUTE of ELECTRICAL and ELECTRONICS ENGINEERS - DENVER SECTION

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Joint Power Engineering/Industry Applications - Bob Sain, Union REA, 659-6551
Start-up Chapter, Laser & Electro Optics Society - Arun K. Majumder, University of Colorado Denver, 556-2715

SENIOR PAST CHAIRMAN
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THE MONTH AT A GLANCE

September 28
Section Executive Board Meeting

October 12
VTS/COMSOC Meeting

October 18
APS/MTS/GRS Meeting

October 20
PES/IAS Meeting
CS/ITS Meeting

October 26
Section Executive Board Meeting

November 2
Section Executive Committee Meeting