the article and preparing a "rebuttal" for the referee. Consequently Chu is not ready to distribute the manuscript or the illustrations he presented as viewgraphs in Washington.

Chu says the concept is unique to the new superconductors because it makes use of resistance induced by small magnetic fields as a switch. "That way we are using a curse to our own advantage."

—WILLIAM SWEET

MICHIGAN TEAM TO JOIN IN FIRST EXPERIMENT AT SOVIET ACCELERATOR

A US team led by Alan D. Krisch of the University of Michigan will cooperate with a team of Soviet scientists on the first major experiment on the UNK accelerator being built at the Institute for High Energy Physics at Protvino, near Serpukhov, 60 miles south of Moscow. The NEPTUN–A experiment, scheduled to begin at the end of 1991, will study collisions of high-energy protons with spinning target protons. The main objective is to determine whether larger-than-expected spin forces persist at higher and currently unavailable energy regions. Experiments by Krisch and collaborators at Argonne and Brookhaven National Laboratories in the 1970s and 1980s posed a challenge to quantum chromodynamics, raising questions about the applicability of perturbative QCD methods at finite values of energy and momentum transfer (PHYSICS TODAY, August 1985, page 17).

The UNK accelerator is being built in stages in a 21-km ring that right now is about 75% complete. The first element will be a booster ring, consisting of conventional magnets, which is expected to be able to accelerate protons to 600 GeV by the end of 1991. A separate ring of superconducting magnets with the capability of accelerating protons to 3 TeV is to be finished around 1994. A second proton ring is to be built parallel to the first shortly thereafter. The injector is the existing 70 GeV proton acclerator.

The Michigan group is building a spin-polarized atomic hydrogen gas jet that the experimenters plan to take to Serpukhov in mid-1991. The jet will scatter high energy protons as its protons' spins reverse direction frequently. The jet relies on a temperature of about 0.4 K and a magnetic field of about 50 kG to polarize the protons' spins. The Soviet-US team also is working on a large spectrometer to detect those protons elastically scattered by the jet.

Using the UNK booster as a non-collider storage ring at around 400 GeV, the NEPTUN–A experiment will take data for 2800 hours in 1992 and 1993. Then, when the 3 TeV ring is completed, the experiment will be repeated, with the expectation of finishing in 1995. By that time the Soviets will be ready to proceed with their own series of other NEPTUN experiments, planning for which preceded NEPTUN–A. (The leader of the NEPTUN team is Vladimir L. Solovianov, and NEPTUN stands for New Experiment on Polarization at the Tunnel of UNK.)

Why not Fermilab?

Physicists from the NEPTUN experiment, which will also use the NEPTUN–A jet target, first seriously discussed cooperating on a UNK experiment with Krisch and colleagues during the September 1986 High Energy Spin Physics Symposium at Protvino. But the Michigan group reacted cautiously, partly out of uncertainty about the near-term future of newly thawing US–Soviet relations. Moreover, Michigan was conducting negotiations with Fermilab about the possibility of doing a similar polarized spin experiment on the Tevatron. But agreement was never quite reached on how to do it, and as US–Soviet relations started to warm up, the scientific and technical reasons for doing the experiment at Protvino began to look more and more attractive.

Because the effects sought in the experiment have a small cross section, a lot of running time is needed. At Fermilab the experiment would have had to be done with an extracted beam, but it works better with an internal beam, which Protvino had to offer. What's more, Protvino would have no equipment for extracting the beam during the period in which the first experiment would be done, and so the experiment would conflict with no other possible use.

The agreement to do the NEPTUN–A experiment was signed in March 1989 by Krisch, Solovianov, IHEP Director Lev D. Soloviev and Michigan President James J. Duderstadt.

The NEPTUN–A team consists of roughly 16 Soviet physicists and 16 US physicists, including four from MIT and Brookhaven National Laboratory, as well as about 12 from the University of Michigan. The MIT group is headed by atomic physicist Daniel Kleppner and is cooperating in the construction of the gas jet, which was recently successfully tested.

Other approved UNK experiments include a multiparticle spectrometer, which will take advantage of the high rate of B-meson production to look for CP violation in that system; a gluon experiment, building on current work at CERN and Protvino; and a hyperon experiment building on recent Fermilab work. Experiments for an area devoted to neutrino beams and 3 TeV on 3 Tev collider experiments are under review.

—WILLIAM SWEET

ACOUSTICAL SOCIETY ELECTS POWELL PRESIDENT

Alan Powell is the president-elect of the Acoustical Society of America, and Katherine S. Harris is vice president-elect. They will succeed the current president and vice president, Harvey H. Hubbard, a consultant for Planning Research Corporation in Hampton, Virginia, and Richard H. Lyon of MIT. The two new members of the ASA executive council are Lawrence A. Crum, associate director of the National Center for Physical Acoustics, and James E. West of the acoustics research department at AT&T Bell Laboratories, Murray Hill.

Powell received his BSc from the University of London in 1949, and went on to earn a PhD in engineering from the University of Southampton in 1953. He was a technical assistant at Percival Aircraft Co in England

Alan Powell