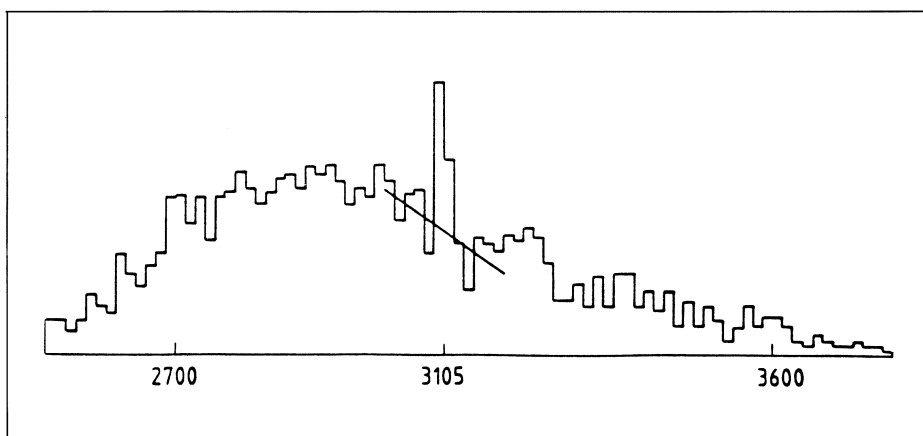


The unexplained U^+ signal at 3.1 GeV seen by the CERN hyperon beam collaboration.



organized nature of the calculations; unusual patterns of hits and noise can easily be recognized and removed.

The technique should be even more valuable for experiments at colliding beam machines, which have to handle very high numbers of produced particles.

Other candidate programs for vectorization are under study at Florida State, including the GEANT simulation/tracking package from CERN used by three of the experiments for the LEP electron-positron Collider.

CERN J for unconventional

In these days of quark/gluon physics and jet spectroscopy, 'bump hunting' — the practice of looking for new particle resonances — is less fashionable than it used to be. However from time to time new bumps are found which have important implications.

One of the unique features of the SPS when it came into operation in 1976 was its beam of high energy hyperons — heavy particles related to nucleons but carrying the strangeness quantum number — and used by several experiments involving Bristol/Geneva/Heidelberg/Lausanne/London/Orsay/Rutherford/Strasbourg teams.

Over the years, these collabora-

tions amassed a wealth of information which cleaned up our understanding of hyperon behaviour, particularly their weak (beta) decay (see December 1983 issue, page 419). Another highlight was the discovery of the A^+ baryon carrying both the strangeness and charm quantum numbers (see March 1983 issue, page 54).

This A^+ signal was seen at 2.46 GeV in interactions producing a lambda and a negative kaon, accompanied by two positive pions. To check that it was not due to something else, the collaboration analysed all events under different assumptions for the final state particles.

When the kaon mass was replaced by that of the antiproton, a prominent peak at 3.1 GeV was seen, and the events making up this signal had no overlap with those giving the A^+ with the negative kaon assignment. Looking at production of a lambda and an antiproton together with up to three charged pions, the team found other peaks at 3.1 GeV, showing that whatever it is exists in three charge states — positive, neutral and negative. The widths of the signals are compatible with the resolution of the apparatus.

The lifetime of the state, called U , was found to be less than 2×10^{-12} s. Its mass is compatible with the famous J/ψ 'charmonium' state consisting of a bound charm quark-antiquark pair. However the quantum numbers of the U are incompatible with charmonium, or with anything else!

People and things

On people

On his retirement from the University of Tokyo at the end of March, Yoshio Yamaguchi also stepped down as director of Tokyo's Institute for Nuclear Study and moved to Tokai University. One of the first Japanese theoreticians to visit CERN many years ago, Yamaguchi is one of the leading figures in Japanese involvement in international physics. He is a member of the International Committee for Future Accelerators (ICFA), and in October will begin a one-year stint as President of the Physical Society of Japan. His place as Tokyo's INS Director is taken by T. Yamazaki from Tokyo's Meson Science Laboratory.

Among the new Fellows recently elected to the prestigious Royal Society in the UK are John Dowell of Birmingham, a member of CERN's Scientific Policy Committee and of the UA1 experiment, and E. W. ('Bill') Mitchell, currently Chairman of the UK Science and Engineering Research Council.

Bob Watt recently retired from SLAC at Stanford after a career spanning some twenty years. On arrival, he was commissioned with overseeing the move of the Lawrence Radiation Lab's 72 inch bubble chamber, which managed to grow by 10 inches in the process. Shortly afterwards he became head of the Bubble Chamber Operations Group at Stanford. He was widely regarded for his ability to nurse sick machines to full health.



◀ Los Alamos line-up: (left to right) John Browne, the Laboratory's Associate Director for Research; Louis Rosen, who stepped down as Director of the Meson Physics Facility (LAMPF) last year (see January/February issue, page 31); new LAMPF Director Gerald Garvey; and Don Hagerman who takes over from Rosen as Division Leader for Medium Energy Physics.

(Photo Los Alamos)

move follows Gerald Garvey's appointment as LAMPF Director, also succeeding Rosen, an assignment which also moves LAMPF scientific policy development into the Central Laboratory's Directorate.

Meanwhile Darragh Nagle leaves the post of Medium Energy Physics Research Group Leader to devote all his efforts to the Cygnus X3 experiment. This incorporates two of the LAMPF neutrino detector cosmic ray shields into a wide area array to measure extensive air showers from the X-ray pulsar. Nagle's successor is Hywel White from Brookhaven.

Over the last few winters more and more geese have been wintering over at Fermilab to enjoy the relatively mild Chicago Januaries. This year the population reached more than ten thousand. The open water from cooling ponds at Fermilab and other nearby developments may be a factor in their choice.

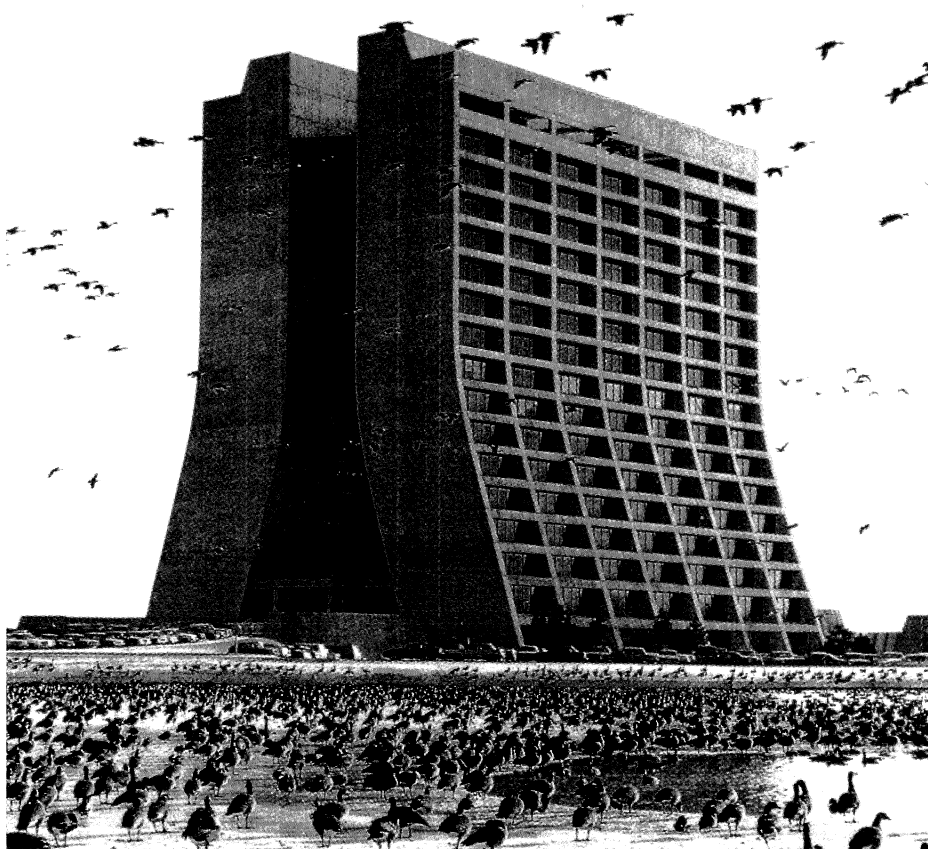
Twenty years ago

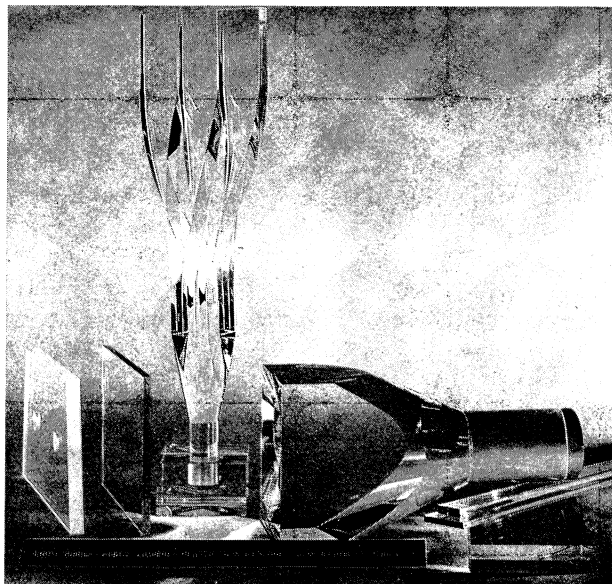
The theory of general relativity was fifty years old. Sites for the proposed next generation of accelerators were under study. CERN Director General Bernard Gregory was visiting a 300 GeV site at El Escorial in Spain, and Greece put forward a site near Athens. On the other side of the Atlantic, the list of proposals for the US 200 GeV machine had narrowed to six, including Weston (Batavia) near Chicago. Amongst the rejected sites was South Barrington, also near Chicago, where an objection was that the influx of scientists would 'disturb the moral fibre of the community'.

Electrons were accelerated to 10 GeV in the two-mile linac at Stanford. The Swiss government authorized construction of a 500 MeV cyclotron at Villigen near Zurich, which became the SIN Laboratory. The CERN PS linac accelerated a 100 mA current for the first time following installation of a duoplasmatron source.

Moves at Los Alamos

Donald Hagerman becomes new Medium Energy Physics Division Leader at Los Alamos (US) National Laboratory, succeeding Louis Rosen as manager of the Los Alamos Meson Physics Facility (LAMPF) organizational unit. Hagerman, along with Rosen and Darragh Nagle, was a member of the original LAMPF design team. This





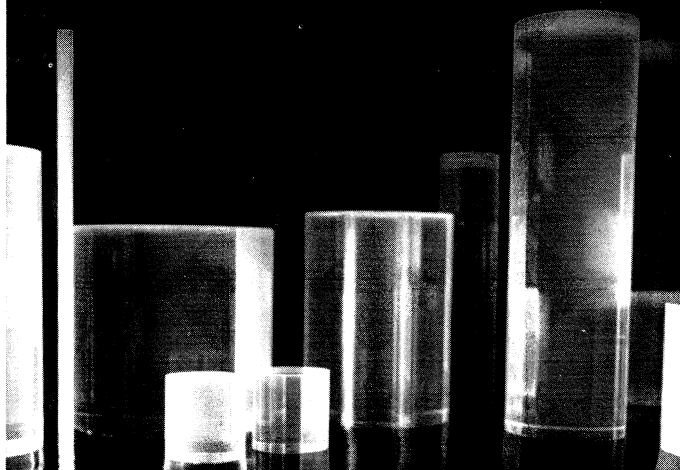
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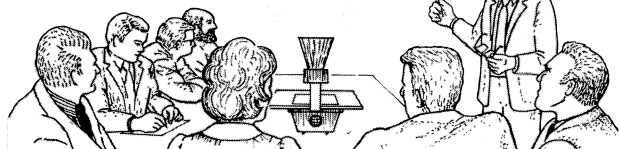
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