Klaus Halbach 1924–2000

Klaus Halbach, a long-time staff physicist with the Lawrence Berkeley National Laboratory and an international expert in magnetic systems for particle accelerators, passed away on 11 May following a long battle with prostate cancer. He was 75.

A native of Germany who received his PhD in physics at Basel in Switzerland, Halbach came to the US in 1957 to work at Stanford with nuclear magnetic resonance pioneer Felix Bloch. Following a short return to Switzerland to start a plasma physics group, he joined the plasma physics group at Berkeley in 1960. His work with plasma physics led him into accelerator design and he was a major contributor to the Omnitrón, a synchrotron that would have accelerated nuclei from hydrogen to uranium. Though never built, the Omnitrón's design laid the groundwork for the Bevalac.

Halbach made his reputation with his work on magnetic systems for particle accelerators. He and Ron Holisinger, a Berkeley engineer and later Halbach's son-in-law, created the famous POISSON computer codes for magnetic system design, still in use after more than 30 years. Halbach went on to become one of the world's premier designers and developers of permanent magnets for use as insertion devices - wigglers and undulators - in synchrotron light sources and free electron lasers. He also designed magnets for the Berkeley Advanced Light Source storage ring.

In addition to his critical contributions to the Advanced Light Source, Halbach served as a consultant to many other projects around the world, including the Advanced Photon Source at Argonne and the Stanford Synchrotron Radiation Laboratory. All of the premier radiation sources within these machines depend on the permanent magnet technology now known as the Halbach Array. He was also a major contributor to the designs of high-resolution spectrometers at Jülich and LAMPF, Los Alamos.

Although he officially retired in 1991, Halbach continued to work on magnet design.

He made contributions to such diverse projects as magnets for a miniature cyclotron that could be used for medical radioisotope production, magnets and low-friction magnetic bearings for an electromechanical battery, and the design of miniature permanent magnet NMR spectrometers for future Mars lander missions.

Halbach trained numerous students in his field and shared his knowledge with generous delight. His contributions and his enthusiasm will be sorely missed.

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