 (continued from page 15)

non that is not very well known because its practical applications are still rather few (but that may slowly change). Therefore, I hope that someone will soon undertake the task of writing a comprehensive up-to-date book on the subject, in that the potential for practical applications can best be promoted by providing a complete, concise, and accurate background.

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More on History of Applied Correlated-Photon Metrology

Regarding the article "Correlated-Photon Metrology without Absolute Standards" in your January issue (page 41), I would like to point out that the general principle behind the idea of a "free lunch" in determining efficiencies of detectors has a history that goes back considerably further than author Alan Migdall indicates. It is a principle that has been used for many years by people in atomic physics engaged in photon–photon and particle–photon coincidence experiments.

The earliest work of which I am aware that used coincidence techniques to determine photon detector efficiencies was that of Eric Brannen and colleagues in 1955.[1] A similar method was employed by F. Cristofori and colleagues in 1963.[2] Later that decade, our research group at the University of Nebraska routinely used the same concept to measure the absolute efficiencies of energetic hydrogen atom detectors.[3]

There is a general principle in all such measurements: An electronic flag raised by the first detector tells the second detector that a photon or particle is on its way; when one measures the signal from the second detector in coincidence with the flag, one obtains the absolute efficiency, including all solid angle factors.

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2. F. Cristofori, P. Fenici, G. E. Frigerio, N. Molho, P. G. Sona, Phys. Lett. **6**, 171 (1963).
3. R. H. McKnight, D. H. Crandall, D. H. Jaecks, Rev. Sci. Inst. **41**, 1282 (1970).

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MIGDALL REPLIES: I thank Duane Jaecks for pointing out earlier origins of the first of the correlated-photon metrology applications described in my article—namely, absolute detector quantum efficiency. The work described in those early references is helpful in putting the technique in a better historical context, although the researchers did not use the high directionality of phase matching that greatly aids the application of the method.

It is interesting to follow Jaecks's leads back to even earlier times, specifically to a mention made in the late 1930s by N. Feather and J. V. Dunworth[1] of the possibility of observing coincidences "visually" in a scintillator initiated by two alpha particles emitted from the same nucleus.

Reference

1. N. Feather, J. V. Dunworth, Proc. R. Soc. London, Ser. A **168**, 566 (1938).

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Faculty Retirement Has a FERP Piece to Go in California

To continue the discussion of faculty retirement in your pages, I would like to describe a program that the California State University System instituted in the 1980s and that, though badly diminished, is still in effect. It is called the Faculty Early Retirement Program (FERP).

When I retired in 1985 at the age of 62, I was a participant in the program. At that time, anyone in my status could retire with full retirement pay but was permitted to enter FERP and teach half-time and receive halftime pay until the age of 70. This program proved to be of great help to the university system as it was utilized by aging faculty, thus releasing space that could be used to hire younger faculty. Many colleagues have told me that they would not retire early if they could not participate in FERP.

In my case, I found that I did get slower and tired out more easily as I aged, and that a halftime teaching load was perfect for me and my students. My student evaluations remained high and included positive remarks about my high energy level (that is still the case, in that I'm one of the ex-FERP participants lucky enough to be needed, albeit less than