

Coincide

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There are many physics experiments in which it is useful to know if two (or more) events have occurred within a very narrow window in time. Such events are said to be “coincidental” and the “coincidence window” is measured in tens of nanoseconds. There are several existing solutions to this problem, but none of them are a good fit for small labs. Modern coincidence counting instruments are often priced well beyond the budget of an educational lab. Others are mostly or fully analog, with little or no data acquisition or data processing capability. Worse yet, these older solutions are still costly, and some require custom parts and hours of soldering to assemble. However, the ever-growing capability and ever-decreasing price of hardware have led to an explosion in hobbyist computing and electronics. There is more off-the-shelf computing power available today than ever before. Coincide is a fully digital coincidence counter, with its own robust data acquisition and computation abilities, composed solely of commercially available components and open source software.