
Billion-billionths of second gives team instant result

FORGET NANOSECONDS – they're just so, well, long. Instead, the new word among physicists is the "attosecond" – which lasts one billion-billionth of a second. And now, a team in Austria has measured an event that lasted 100 attoseconds, or 10 million-billionths of a second.

By using an X-ray laser they were able to observe an electron moving around inside an atom, and time how long it took to travel a specific distance.

The work, led by Ferenc Krausz at the Vienna University of Technology, leaps beyond the previous boundaries of nanoseconds – billionths of a second –

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and femtoseconds, or a million-billionth of a second.

In a paper published today in the science journal *Nature*, Professor Krausz's team announces the measurement of the subatomic events lasting about 100 attoseconds, which they said "is to our knowledge the shortest interval of time directly measurable to date". Professor Krausz says such work provides new insights into how the electron "shells" that surround the nuclei of atoms and molecules operate.