

Antimatter at CERN - Real Science or Best-selling Fiction?

In the forward to his best-selling novel "Angels and Demons" (currently number 5 on the New York Times list), Dan Brown writes:

"Until recently antimatter has been created only in very small amounts (a few atoms at a time). But CERN has now broken ground on its new Antiproton Decelerator - an advanced antimatter production facility that promises to create antimatter in much larger quantities.

One question looms, will this highly volatile substance save the world, or will it be used to create the most deadly weapon ever made?"

CERN is the European Organization for Nuclear Research in Geneva, Switzerland. Dan Brown's book was first published in 2000. In fact the Antiproton Decelerator (AD) is up and running, and anti-atoms HAVE been made in much larger quantities. Two AD experiments, ATHENA and ATRAP, have been regularly producing antihydrogen since 2002. In my talk I will describe how scientists make neutral antimatter from plasmas of charged particles, and I will discuss the exciting insights we hope to obtain from comparing antimatter with matter. Along the way, I will hopefully bridge the reality gap between what happens in the laboratory and what happens in the imagination of a highly entertaining novelist. Bottom line: the Vatican is quite safe from antimatter physicists.

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