You can’t spell Physics without Pi

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Date: Tuesday, March 19

Time: 12:00 - 12:50 pm

Location: Room 703, Thackeray Hall

Collisions between two masses $m_1$ and $m_2$ have two important quantities: momentum and energy, respectively given by

\[ p = m_1 v_1 + m_2 v_2, \quad E = \frac{1}{2} m_1 v_1^2 + \frac{1}{2} m_2 v_2^2. \]

Momentum is always conserved, energy is sometimes not (e.g. lost to friction). Imagine a small mass $m$ and a larger mass $M$. Mass $M$ hits $m$, $m$ hits a wall, bounces back, and hits $M$ again. Mass $m$ continues to bounce back and forth between $M$ and the wall while $M$ continues moving forward towards the wall (the collisions become more and more frequent). If energy and momentum are both conserved and $M/m$ is the right ratio, the number of times the two masses bump into each other (before $M$ changes direction) is related to the digits of pi! BUT HOW?!? Food and drinks will be provided!

Organized by: Derek Orr, Tom Everest, Jeremiah Morgan, Jeff Wheeler