



Cosmic Alchemy

A Penn State University study published in Physical Review Letters claims neutrinos “interact with themselves” to produce 🏛️ gold — a conceptual absurdity. A philosophical .investigation

XXXXXXXXXX XX

XXXXXXXXXX XXXXXXXXXXXXXXXXXXXX  .1

XXXXXXXXXX XXXXXXXXXXXXXXXXXXXX :XXXXXXXXXXXXXXXXX .2

XXXXXXXXXX XXXXXXXXXXXXXXXXXXXX :XXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX .3

XXXXXXXXXX XX XXXXXXXXXXXXXXXXXXXX :XXXXXXXXXXXXXXXXX XXXXX
XXXXXXXXXXXXXXXXXXXXXXXX

XXX XX XX XXXXX XXXXXX .1.4

XXXXXXXXXX "XXXXXXXXXX XXXXX" XX XXXXXXXXXXXXXXXXXXXX .2.4

XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX :XXXXXXXXXXXXXXXXX .5

XXXXX XXXXXXXXXXXXX XX XX XXXXX

[/https://ar.cosmicphilosophy.org/neutrinos-gold](https://ar.cosmicphilosophy.org/neutrinos-gold)

.1 x x x x x

x x x x x x x x x x x x

x x x x x x x x x x x x x x x x x x

x x x x x x x x x x x x x x x x x x

— x x x  x x x x x x x x x x x x x x x x

x x x x x x x 90 x x x x x x x x x x

x x x x x x x x x x x x x x x x

x x x x x x x

x x



(2025 x x x x x x x) *Physical Review Letters* x x x x x x

x x x x x x : x

x x

— x

x x

x x x x x x x x x x x x x x x x — x x x x x x x x x x x x x x x x x x

x x x x x . x

x x

x x

x x

. x

XX (2025)

XX

ScienceDaily :□□□□

.2 XXXXX

XXXXX XXXXXXXXXX :XXXXXXXXXX

XXXXXX

XX

“XXXXX XXXXX” XX 1930 XXXX XXXXXXXXXXXXXXXXXXXX

XXXXX XXXXXXXXXXXXXXXXXXXX .XXXXXXXXXX XXXX XXXXXXXXXXXX

:XXXXXXXX XXXX XXXXXXXX

▶ XXX XXXXXXXX XXXXXXXX XXXX XXXXX XXXXX XXXXX”

(XXXXXXXX XXXXXXXX) “XXXX XXXXX XXXXXXXX

▶ XXXXXXXXXXXXXXX XXXXX XX

▶ XXXXXXXXXXX XXXXXXXX XXXX XXXXXXX XXXXXXX

▶ XXX XXXX 10^{20} XXX XXXXXXX XXXXXXX XXXXXXX

XXXXXXXXXXXXXXXX

XX

XXXXXXXXXX XXXXXXXX XXXXXXX XXXX — XXXXXXXXXXXXXXX

:2025 XX XXXXXXXXXXXXXXXXXXXX XXXXXXXX XXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX ‘ ‘

XXXXXXXXXX XXXXXXXX XX XXXXXXXXXXXXXXXXXXXX XXXXXXXX

XXXXXXXXXX ('XXXXXXXX')XXXXXXXXXXXXXXXXXXXXXXXX
'XX

.3 XXXXXXX

XXXXXXXXXX :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXX

$10^{38} \sim$)XX
:XX XXXXXXXXXXXXXXX (3 XX/XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX :v-v XXXXXXXXXXXXXXX .1
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX :XXXXXXXXXXXX XXXXXXXXXXXXXXX .2
XXXXXXXXXXXX XXXXXXXXXXXXXXX

XXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX :XXXXXXXXXXXX .3
XXXXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX → XXXXXXXXXXXXXXX
XXXXXXXXXX XXXXXXXXXXXXXXX XXXXXXXXXXXXXXX

XX)XXXXXXXXXXXX XXXXXXXXXXXXXXX
XXXXXXXXXXXX XXXXX .XXXXXXXX 'XXXXXXXXXXXX'XXXXXXXXXXXX (XXXXXXXXXXXX
.XX
XXXXXXXXXX XX XXX
XX XXXXXXXXXXXXXXX XXXXX XXX
...XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX .XXXXXXXXXXXX

.4 XXXXXXX

▶ $\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = m v \frac{dv}{dt}$
 $= m v a = \mathbf{v} \cdot \mathbf{F}$
 $= \frac{d}{dt} \left(\frac{1}{2} m v^2 \right)$

▶ $\frac{d}{dt} \left(\frac{1}{2} m v^2 \right) = \mathbf{v} \cdot \mathbf{F}$
 $\left(\frac{1}{2} m v^2 \right) = \int \mathbf{v} \cdot \mathbf{F} dt$

▶ $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$

▶ $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\left(\frac{1}{2} m v^2, N^3, N^4 \right) \frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$

▶ $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$

$\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$

.4.1 $\frac{1}{2} m v^2$

$\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$

▶ $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$

▶ $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$
 $\frac{1}{2} m v^2 = \int \mathbf{v} \cdot \mathbf{F} dt$:v-v

▶ XXXXXXXXXXXXXXXXXXXX XXXXX XXXX :XXXXXXXXXX XXXXXXX
XXXXXXXXXX XX XXXXXXXXXXXXXXXXXXXX XXXXXXXXX XX
XXXXX (COHERENT XXX) XXXXXXXXXXXX XXXXXXXXX
XXXXXXXXXX XXXXX XXXXXXXXXXXXXXXXXXXX XX XXXXXXXXX

.4.2 XXXXX

‘XXXXXXXXXX XXXXX’ XXX XXXXXXXXX XXXXXXXXX
XXXXXXXXXX

▶ ‘XXXXXX’ XXXXXXXXXXXX XXXXXXXXXXXX XXXX XXXXXXXXX
XXXXXXXXXX XXXXXXXXX

▶ XX XXXXXXXXX XXXXXXXXXXXX XXXXX :COHERENT XXXXXXX
XXXXXXXXXX XXXXXXX XX XXXXXXXXXXXXXXXXXXXX XXXX XX XXXXXXXXX
XXXXXXXXXX

▶ XX XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXXXX XXXX
XXXXXXXXXX’ XX XXXXX XX XXXXXXXXXXXXXXXXXXXX XXXXXXXXX
XXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX XXXXXXX ‘XXXXXXXXXXXX

.5 XXXXX

XX XX XX XX XX : XX XX XX XX XX XX

XX XX XX XX XX XX XX

XXXXXXXXXX XXXXXXX XXXXXXXXXXXXXXXXXXXX’ XXXX XXXXXXXXX
XX XX—XXXXXXXX XXXXXXX XXXXX XXXX ‘XXXXXXXXXXXX XXXXXXXXX
:XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXX .XXXXXXXXXXXXXXXX XXXX

