

# Todd Kozlowski

1992

born, St. Petersburg, FL, USA

2011- 2015

undergraduate education at the  
University of Florida

2016- 2022

PhD for work on the ALPS II  
experiment at DESY

2023 - ??

DESY FH Fellow





# About Me





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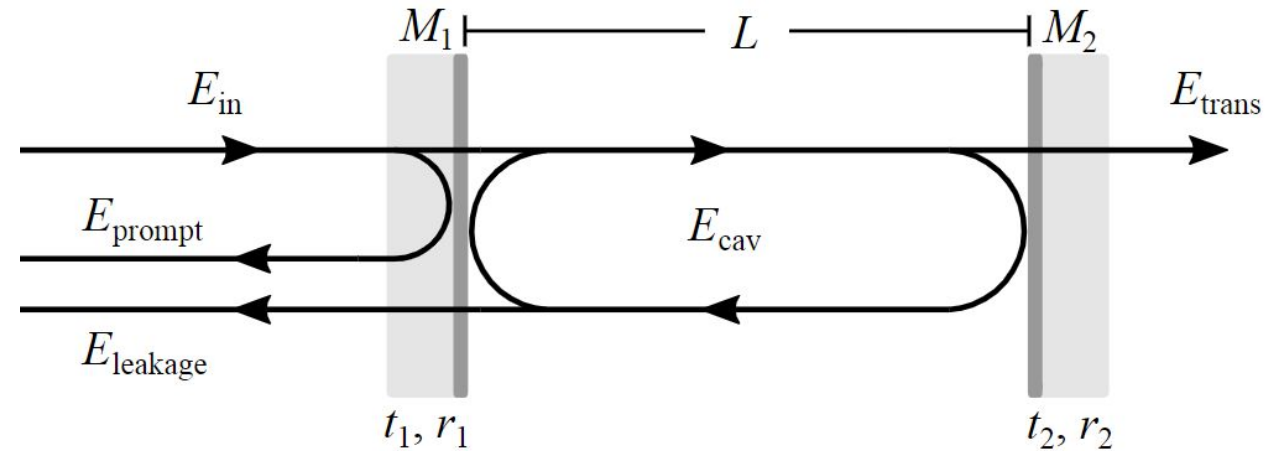
# My Current Work

I use **high-quality laser optics** and **techniques in precision interferometry** to boost the sensitivity of the ALPS experiment to theoretical particles **beyond the Standard Model**.

**Optical cavities** “store” circulating light which, on resonance, formed a standing wave. In this way, the power of circulating light can be **thousands of times larger** than the power of the input laser.

- Achieved a **world record** for the storage time of two-mirror optical cavity: **6.75ms**

Will soon use those same techniques to develop a scheme to measure the **magnetic birefringence of the vacuum** predicted by quantum electrodynamics.





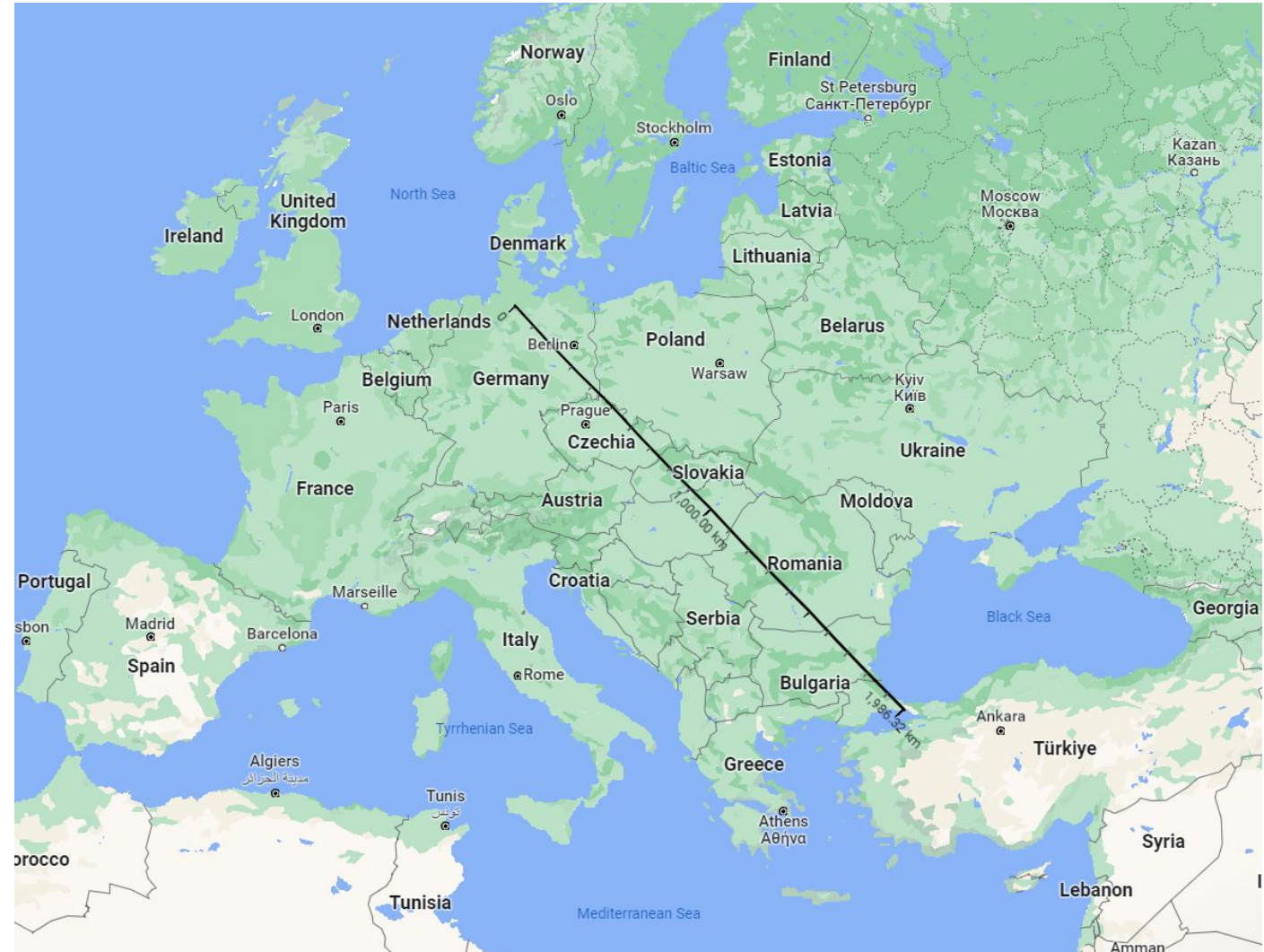
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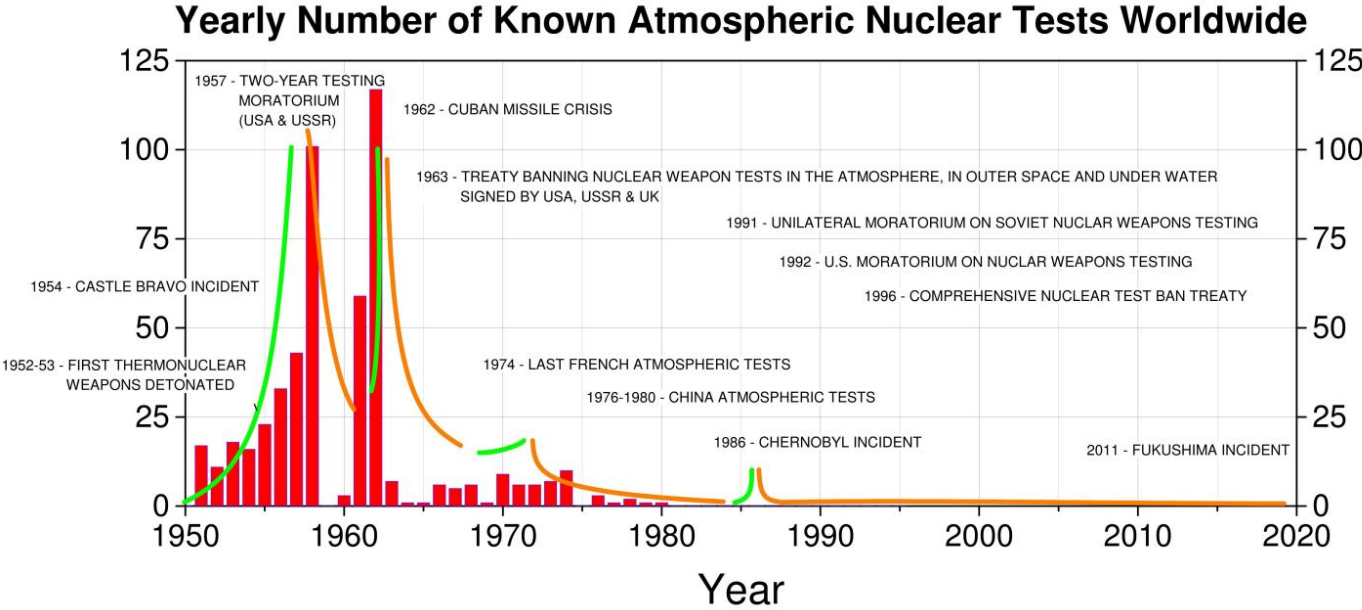
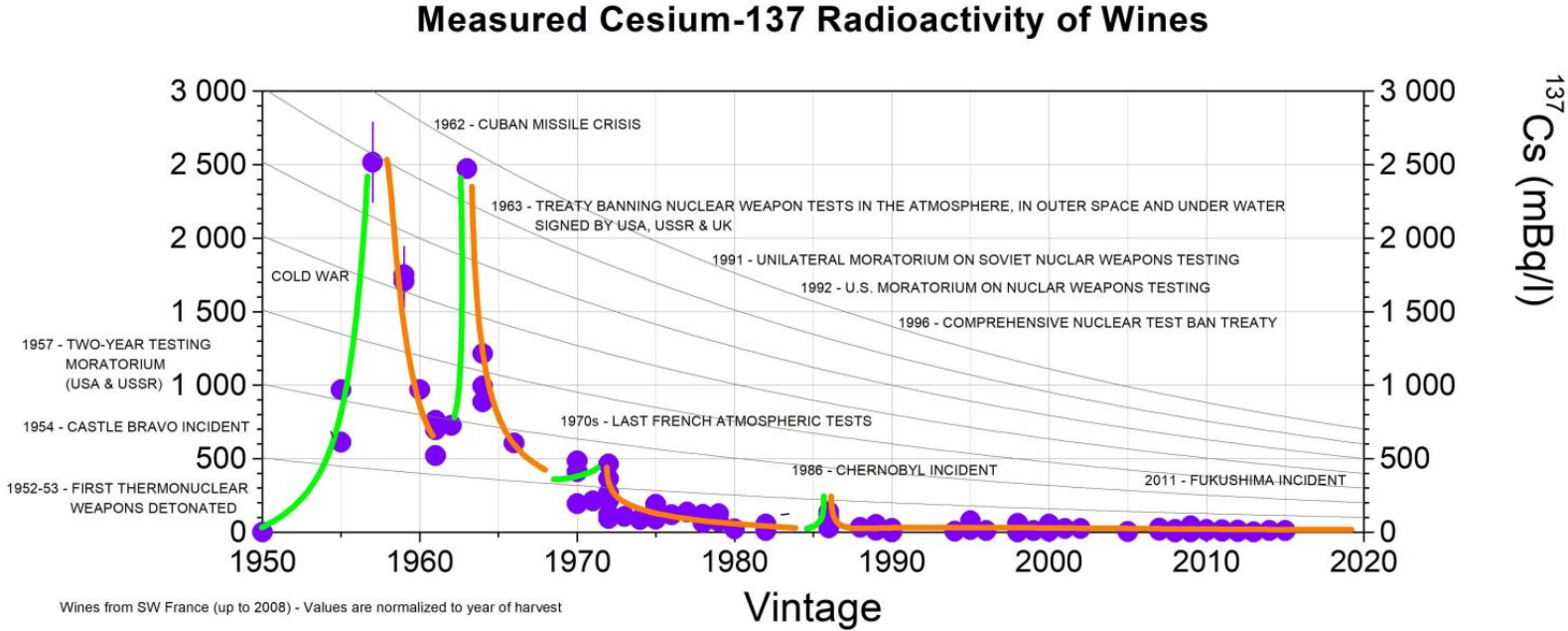
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# My Favourite Plot





# My Favourite Plot

- This method is used to check for wine fraud
- Including, famously, alleged wine from Thomas Jefferson's private collection
- Sold for \$150,000 / bottle to Republican super-donor **Bill Koch**
  - by Schlager music manager **Hardy Rodenstock**

