

Dr. Aeschbach:

Here we summarize revisions to 'Krypton-85 chronometry of spent nuclear fuel'. Our responses to the reviews each included a list of our proposed revisions, and below we index them to their locations in the revised manuscript. In addition, we made minor changes to simplify some potentially confusing aspects of the paper, in particular removing unnecessary discussion of mixed fast and thermal neutron production. Note that the line numbers refer to the revised manuscript, NOT the latexdiff comparison of the original and revised versions.

-- Greg Balco on behalf of all co-authors

**RC1 (Leya):**

1. Add text briefly describing the fact that we did not observe diffusive fractionation during heating.  
-- We added discussion of this in lines 193-202.
2. Add discussion to clarify the process by which gas loss affects Kr and Xe isotope ratios. Specifically, we will clearly distinguish the concept of potential fractionation of gas during diffusive loss from the concept of preferential retention of gas produced later in the irradiation.  
-- We revised lines 229-262 to include additional discussion of this issue.
3. Add discussion to clearly define the concept of an "apparent age" that falls within a period of irradiation, but does not correspond to a specific event.  
-- We added this in lines 98-110.
4. Expand the description of blank corrections as noted above.  
-- We expanded the relevant part of the methods section in lines 185-193.
5. Make various technical corrections and clarify certain areas noted by the reviewer.  
-- These corrections have been made throughout the text.

**RC2 (anonymous):**

1. Add a modest amount of additional context to the discussion of nuclear forensic applications in the abstract and introduction.  
-- We expanded the introduction (lines 9-41), including additional background references, and expanded the abstract.

**CC1 (Popov):**

1. Try to add additional background information on various nuclear processes that are not commonly used in geochronology  
-- We added a number of clarifying sentences throughout the paper.
2. Include equations for initial ratio and age  
-- These now appear in lines 91-96.
3. Add collection details for images  
-- We added this information to Figs. 3 and 4.