Reply to Comment by D. Schumann *et al.* on The interaction of neutrons with ^{7}Be at BBN temperatures: Lack of Standard Nuclear Physics Solution to the "Primordial ^{7}Li Problem"

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Schumann, Dressler, Paul and Koester [1] attempt to refute our paper [2]. But in fact, they pose question concerning our publication [3] (and not our paper [2]). I review below, for the US-Israel-Switzerland collaboration, our publication [3] that already addressed these questions.

As we discussed on page 5, right column, second paragraph [3], there is no disagreement of the data shown in the poster of the NIC2016 conference (Ref. 10 of [1]). This poster was well labeled as a "progress report" of preliminary data, nevertheless we demonstrated [3] that when accounting for the different etch conditions, the preliminary data shown in the NIC2016 poster (Ref. 33 of [3]) are in agreement with our results. Concerning the discussion of another preliminary data shown in another "progress report" in the CHANDA2015 meeting (Ref. 9 of [1]). These data were from our first attempt of etching CR39 plates at the laboratory of a co-author of the comment; Professor Paul of the Hebrew University of Jerusalem. The collaboration [3] judged these data not suitable for publication, for many reasons, not the least of which that the oven used at the Hebrew University *exploded*. Concerning the (mis)quoted systematic uncertainty of 0.2 microns [1]. As we discuss on page 5, right column, last paragraph [3], this systematic uncertainty does not apply to the proton data. These data are from two regions of the same CR39 plate, that are used to measure the foreground and background of the proton data. The two regions are separated by 0.5 mm. As we stated [3]: temperature variations "across a few mm in *one CR39 plate* are not possible within our strict etching procedures" [3]. We further stated [3] this systematic uncertainty is due to temperature "variation between *two different* etched CR39 plates". The "ambiguous uncertainty of 3% (relative uncertainty of 34%)" stated in [1], is in error. When changing the region of radii of interest, the proton yield is changed by the same factor as the proton calibration [3]. Consequently, different regions of radii of interest (RRI) lead to the same ratio of the proton yield and the calibration curve yield, as shown in black dots and blue line, respectively, in Fig. 3(b) [2].

Fig. 1 [1] is a misrepresentation of our data. The shown preliminary data of the NIC2016 poster [1], were obtained in our "on-line analysis" using a manually controlled microscope. Overlayed on these data "The RRI used for the cross section determination is indicated as shadowed area" [1]. But as discussed in [3], the RRI is deduced in our global "of-line analysis", using the computer-controlled microscope of the Bar Ilan University (BIU). As shown in slide #20 of the CHANDA2015 presentation (Ref. 9 of [1]), the BIU microscope used in the "of-line analysis" and the manually controlled microscope used in the "on-line analysis", have different calibrations. The (manufactured) shift shown in Fig. 1 [1], between the data and the RRI, is due to the different calibrations of the two microscopes and is not due to a real shift in the data.

In conclusion Schumann, Dressler, Paul and Koester, are entitled to their opinion. However, we demonstrated that no valid criticism based on data is provided [1]. The necessary information, refuting the claims, was already published by us [3]. The claims of [1] are a misunderstanding or misrepresentation of our results [3].

[1] D. Schumann, R. Dressler, U. Koester, M. Paul, version 3, comment, EPJ WC, 2021.

[2] M. Gai, E.E. Kading, M. Hass, K. Nollett, S. Stern, T. Stora, A.Weiss, EPJ WC **227**, 01007 (2020).

[3] E.E. Kading, O. Aviv, I. Eliyahu, M. Gai , S. Halfon, M. Hass, C.R. Howell, D. Kijell, Y. Mishnayot, I. Mukul, A. Perry, Y. Shachar, Ch. Seiffert, A. Shor, I. Silverman, S.R. Stern, Th. Stora, D.R. Ticehurst, A. Weiss and L. Weissman., "Tests and calibrations of nuclear track detectors (CR39) for operation in high neutron flux", Phys. Rev. Res. **2**, 023279 (2020).