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Dear Dr. Gráf,

we acknowledge the receipt of your letter of January the 17th, and are very grateful to you for the reprints of your papers.

We inclose a reprint of the note already published in the Physical Review, as well as a reprint of a more detailed paper on our experiments on K^{40} , published in the Anais da Academia Brasileira de Ciencias, XIX, 189, 1947. The gamma-counter of the first experiment is described in the text and its dimensions are given in figure 1. The source we utilised was commercial KCl. Unfortunately we omitted to indicate in figure 2 the exact numerical values of the counting rates and we do not remember them now. However the counting-rate of the gamma-counter without absorber was $\sim 10 \text{ sec}^{-1}$. The absorber thickness was increased till 10 gr.cm^{-2} . In the second experiment we used the same source surrounding completely the beta-counter. This counter had the same area as each counter of gamma-rays. The counters were of a length $\sim 15 \text{ cm}$ and their diameter was $\sim 1,5 \text{ cm}$. The beta-counter was of a cylindrical type, with thin walls of silver-coated glass. The counting rate of beta-gamma coincidences was between 2 and 4 counts per minute.

The counting rate with and without KCl was measured with a statistical precision of 1% and both rates were the same. Thus we may state that the gamm-rays cannot be associated with all the beta-rays but we cannot exclude that perhaps less than 30% of the beta-rays are associated with gamma-radiation. This is, of course, a very rough estimate. However our beta-counter required rather energetic beta-rays, and maybe we did not detect coincidences between the gamma-radiation and some very soft beta-rays.

We ruled out the hypothesis that a soft beta-ray is associated with the gamma-rays of 1,5 Mev., because the energy involved in this transition is $>1,5$ Mev. But the upper limit of the beta-spectrum (see Dzelepov and others) is somewhat too low for a direct transition from K^{40} to the ground-state of Ca^{40} . A gamma-ray of ≈ 150 Kev. should be associated with each beta-ray. We believe that if such a coupling existed, we would have detected it in our measurements. These arguments justify our statement that the gamma-rays cannot be coupled with the beta-rays.

We did not perform further experiments on K^{40} . One of us (M.D.S.S.) is working with the betatron of our University, and the other two are doing research in cosmic radiation. However we continue at your disposal and we are highly interested in your results.

Sincerely yours