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THE COUNTING RATE CHARACTERISTIC AND THE DEAD TIME CORRECTION ON THE HEADTOME III. S.Yamamoto and M.Amano.Shimadzu Corporation, Kyoto.I.Kanno and S.Miura.Brain & Blood Vessels-AKITA,Akita.

In PET studies, a precise dead time correction is very important for quantitative measurements. We present a new method which can accurately correct the counting dead time independent of the object's size and shape.

On the Headtome III, it is found that counting loss for true coincidences depends on the accidentals rate. Corrections for dead time loss are calculated from the on-line measurement of accidentals rate.

Without the dead time correction, the Headtome III measured about 10% dead time loss at a count rate of 30 Kcps. With the correction presented, the count loss decreased less than 1% at 50 Kcps independent of object's size and and shape. It was confirmed by the experiments that the accuracy of the method was insensitive to the alteration of the ratio of accidental to true coincidences caused by the shape of the slice shield.
