

Figure 1: Span sampling

Slice view of 9 detector rings. Ring-ring directions are identified by the ring difference $r_2 - r_1$. With span 3 sampling, 3 directions (+1, 0, -1) from ring r_1 to ring r_2 are sampled to the same bin 0 a). Similarly for span 7 b). All span directions are not available at all rings c). The distinguished directions go to different ring difference bins (+3, 0, -3), called "segments" d). [1]

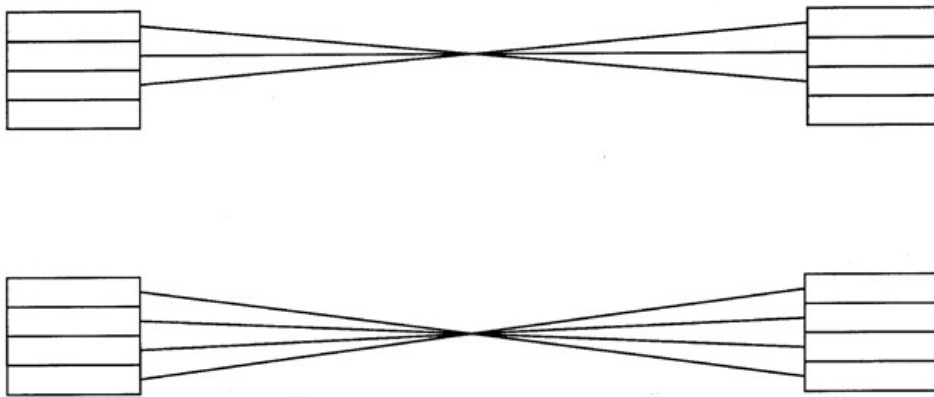


Figure 2: Ring pairs in span 7 sinograms

Slice views of 4 detector rings with Z vertical and X horizontal. LOR are recorded in the sinogram if they have equal ring-ring direction (according to span) and mean ring number. Figure by [1] reprinted with permission from Journal of Nuclear Medicine & Technology.

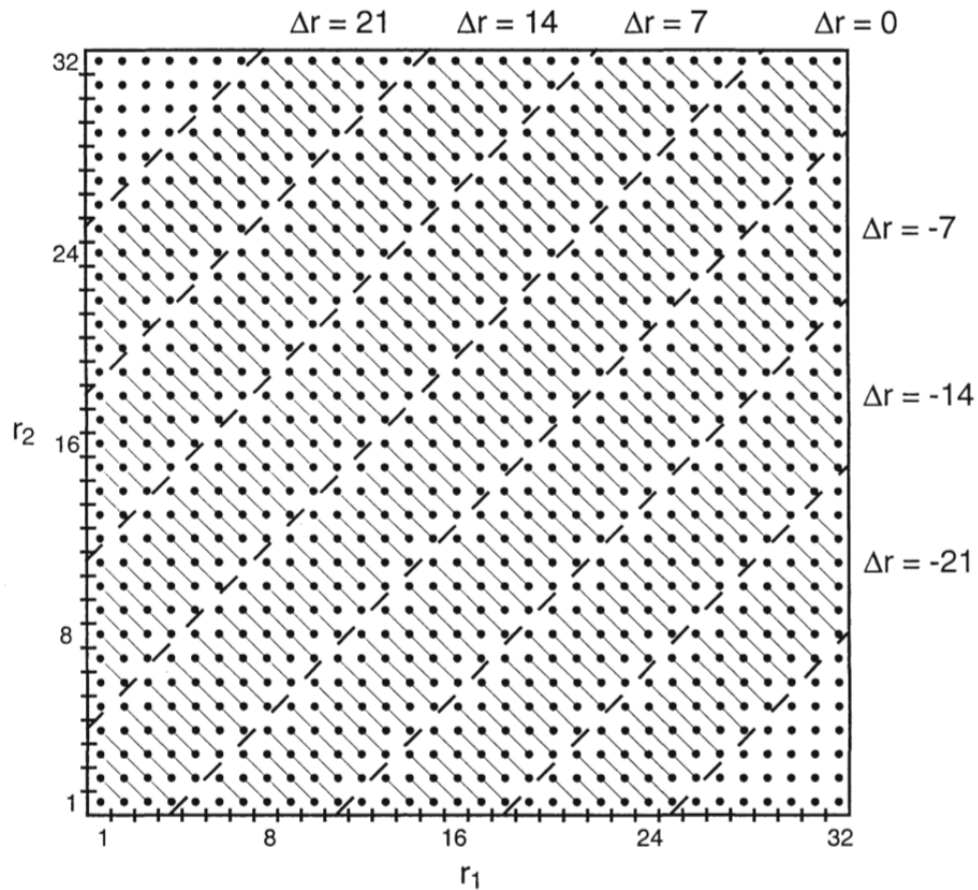


Figure 3: Michelogram

A plot of ring pairs, that is a "michelogram", in a scanner with 32 rings [2]. Each ring-pair point indicates a sinogram bin. The bins form 7 diagonal segments (average $\Delta r = 0, \pm 7, \pm 2 \cdot 7, \pm 3 \cdot 7$) between the dashed lines. The separation of adjacent segments with 7 detector rings indicate span 7. In each segment, sinograms with the same ring pair mean (connected by a line) are recorded at the same bin. Sinograms exceeding the maximum ring difference ($=24$) are not recorded. The segment with $\Delta r=0$ is called "direct"; other segments are "oblique". Reprinted by permission from Springer Nature: [2].