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that information giving the distribution of activity could be obtained by solving a system of simultaneous equations, with the volume of interest divided into the same number of elements of volume as the number of useful counter pairs. The simultaneous equations method proved to be impracticable, however, and other approaches were tried. Of the several other approaches, only the one developed by Dr. Bozzo has been tested clinically and it will be emphasized here. This method is described as follows:

In order to analyze the data, a mathematical model is developed, upon which the computer program for solution and for display of the results is based.

The model will involve only a plane of interest, the limits of which will be the circle defined by the detector array.

Within this plane any point can be represented by an expression Ac(i, j) where Ac is the activity at the point i, j.

The total activity within the plane will be

$$\text{Total Activity} = \sum_{i}^{n} \sum_{j}^{\rho} Ac(i, j)$$

Where n and ρ represent the upper limits of the area under consideration expressed in the incremental units L for n, and m for ρ.

The complete distribution of activity in the plane can be represented in general form by the matrix

$$\begin{bmatrix} Ac(L, m) & & & \\ & \ddots & & \\ & & \ddots & \\ & & & Ac(n, \rho) \end{bmatrix}$$

In order to choose appropriate values for the limits n and ρ, as well as the practical values for L and M, we study the different sectors defined by various pairs of counters.

In Slide 4 we can see different sectors defined by randomly chosen pairs.

If we impose some conditions on the pair ordering such as a particular number of detectors apart, then we obtain several sets of counter pairs with some particular sector defined by each set.