

Correction for overdispersion due to observing correlated counts in three methods of measuring  $^{222}\text{Rn}$  in air

Lucas and Woodward (J Appl Phys 35: 452-456; 1964) described a factor, J, for correcting the Poisson variance of a count from a scintillation cell for the overdispersion caused by observing correlated counts. J is the ratio of the variance to the mean of the count; thus, the Poisson variance is multiplied by J to obtain an estimate of the true variance. **This paper expands on the earlier work in that four types of scintillation cells of varying geometries in use presently were considered.** Further, measurements of the individual calibration factors of the three alpha-emitting radionuclides were used rather than assuming that they contributed equally to the count. Also, J factors are presented for two other techniques for measuring radon in air; the charcoal canister and the liquid scintillation charcoal vial.