

CHROM. 10,373

## Letter to the Editor

---

### Determination of the dead time

Sir,

Recently, a paper on "Determination of the dead time" by Haken *et al.*<sup>1</sup> was published in this journal. We consider this subject to be very important, as we said in our paper<sup>2</sup> which was commented on by Haken *et al.* We consider papers that provide a good guide when choosing a method to apply in a certain instance to be especially useful, and that by Haken *et al.* falls into that category. Nevertheless, there are some points in their paper that we wish to clarify, as follows.

(1) We consider that four points are insufficient in order for significant differences among the methods to be observed, as they are completely equivalent when three points are used.

(2) Both the lack of repetition of measurements of points and the small number of points on the straight line, give results with very wide confidence limits. As a consequence, the value of the dead time so calculated by any method will be very uncertain.

(3) We consider that any study made on the effect of "small perturbations on the dead time" must be made through random perturbations. We were surprised by the kind of perturbations made by Haken *et al.*, because they were carried out in such a way that the slope of the straight line is directly modified by this influence. We feel that the methods mentioned do not cover all possible modifications of the instrumental parameters, which have to be controlled or eliminated by instrumentals means, but cover only the random variations.

(4) As each series of experimental data used to calculate a dead time leads to the definition of a different straight line, the dead times are really different. This gives that the dead time viability will depend not only on the number of points on the straight line, but also on the number of repetitions of the experimental measurements of each point.

*Sección Cromatografía de Gases, Depto. Química Analítica,  
Instituto Químico de Sarriá, Barcelona 17 (Spain)*

M. GASSIOT

*Instituto Química Orgánica, Patronato Juan de la Cierva  
(CSIC), Barcelona 17 (Spain)*

X. GUARDINO  
J. ALBAIGÉS

*Sección Cromatografía de Gases, Depto. Química Analítica,  
Instituto Químico de Sarriá, Barcelona 17 (Spain)*

G. FIRPO  
R. RODRÍGUEZ-VIÑALS

### REFERENCES

- 1 J. K. Haken, M. S. Wainwright and R. J. Smith, *J. Chromatogr.*, 133 (1977) 1.
- 2 X. Guardino, J. Albaigés, G. Firpo, R. Rodríguez-Viñals and M. Gassiot, *J. Chromatogr.*, 118 (1976) 13.

(Received May 13th, 1977)