$$\left\langle \int m_0^2(z)dz \right\rangle . \quad (22)$$

La courbure de $j(s')$ à l'origine a pour expression:

$$\left.\frac{d^2j(s')}{ds'^2}\right|_{s'=0} = 4\pi^2 \left\langle \int m_0(z)m_2(z)dz \right\rangle . \quad (23)$$

Les deux grandeurs (22) et (23) ne dépendent que des propriétés géométriques de la particule. Elles peuvent être obtenues directement par l'expérience, sans faire d'hypothèses sur la structure et la forme de la particule.

Note 1

Dans le cas où la densité électronique à l'intérieur de la particule est constante et égale à ϱ, la fonction $p(r)$ définie ci-dessus est proportionnelle à la fonction dite caractéristique (Guinier & Fournet, 1955, p. 12):

$$p(r) = V\varrho^2\gamma_0(r) .$$

Note 2

$$\langle I(\mathbf{s})\rangle = \int_{V_\mathbf{r}} P(\mathbf{r})\langle \cos 2\pi\mathbf{r}\times\mathbf{s}\rangle dv_\mathbf{r}$$
$$= \int_{V_\mathbf{r}} P(\mathbf{r})\frac{\sin 2\pi rs}{2\pi rs} dv_\mathbf{r}$$
$$= \int_0^\infty \frac{\sin 2\pi rs}{2\pi rs}\langle P(\mathbf{r})\rangle 4\pi r^2 dr$$
$$= \frac{2}{s}\int_0^\infty r\langle P(\mathbf{r})\rangle \sin 2\pi rs dr .$$

Note 3

$$\lim_{L\to\infty} \frac{1}{2}\int_{-L}^{L} \left\{\iiint p(\mathbf{r}'+\mathbf{z}) \cos 2\pi(\mathbf{r}'\times\mathbf{s}'+lz)dv_{\mathbf{r}'}dz\right\}dl$$
$$= \iiint \left[\lim_{L\to\infty} \frac{1}{2}\int_{-L}^{L} \cos 2\pi lz dl\right] p(\mathbf{r}'+\mathbf{z}) \cos 2\pi\mathbf{r}'\times\mathbf{s}' dv_{\mathbf{r}'}dz$$
$$= \int\left\{\int\left[\lim_{L\to\infty} \frac{\sin 2\pi Lz}{2\pi z}\right] p(\mathbf{r}'+\mathbf{z})dz\right\} \cos 2\pi\mathbf{r}'\times\mathbf{s}' dv_{\mathbf{r}'}$$
$$= \int p(\mathbf{r}') \cos 2\pi\mathbf{r}'\times\mathbf{s}' dv_{\mathbf{r}'} .$$

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Short Communications

Contributions intended for publication under this heading should be expressly so marked; they should not exceed about 500 words; they should be forwarded in the usual way to the appropriate Co-editor; they will be published as speedily as possible; and proofs will not generally be submitted to authors. Publication will be quicker if the contributions are without illustrations.

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X-ray crystallography of lycomarasmin copper salt.* By Y. Okaya and R. Pepinsky, *X-Ray and Crystal Analysis Laboratory, The Pennsylvania State University, University Park, Pa., U.S.A.*

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We have examined the crystalline copper (II) salt of the wilting compound lycomarasmin, material having been very kindly furnished by Prof. Pl. A. Plattner in Basel. A previous X-ray examination of this crystal (Plattner, Günthard & Boller, 1952) had led to the assignment of space group *Pmmm*, with $a = 7\cdot36$, $b = 10\cdot64$, $c = 21\cdot58$ Å and $Z = 8$. An inconsistency appeared in the molecular weight, as computed from these data, and the observed density of $1\cdot737$ g.cm.$^{-3}$. Since lycomarasmin is an optically active natural product, space group *Pmmm* is impossible.

We find the following:

$$a = 11\cdot05,\ b = 16\cdot82,\ c = 7\cdot36 \text{ Å},$$

space group $P2_12_12_1$, $\varrho_o = 1\cdot756$ g.cm.$^{-3}$, $Z = 4$, molecular weight (obs.) $= 360\cdot4$. Assuming the formula $C_9H_{13}O_7N_3Cu.H_2O$, the calculated molecular weight is $356\cdot7$, as reported by Plattner *et al.* (1952).

The structure is under examination by the anomalous-dispersion method (Pepinsky & Okaya, 1956*a*, *b*).

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