ADDENDUM TO THE ARTICLE "STATIC THEORY OF THE TRANSFER OF SCALAR SUBSTANCE IN INHOMOGENEOUS TURBULENCE"

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In our article [1] the terms

$$\left(\frac{\partial}{\partial \xi_j}, \overline{u_i' \gamma' p}\right)_0 \tag{1}$$

in Eqs. (15) and (16) were omitted without any reasons being given.

One can obtain the following equation for the quantity (1):

$$\frac{1}{4\rho} \cdot \Delta_{\mathbf{x}} \left(\frac{\partial}{\partial \xi_{j}} \overline{u_{i}' \gamma' p} \right)_{0} + 2 \frac{\partial U_{m}}{\partial x_{n}} \left(\frac{\partial^{2}}{\partial \xi_{m}} \overline{u_{i}' \gamma' u_{n}} \right)_{\mathbf{0}}$$
$$+ \frac{1}{2} \cdot \frac{\partial^{2} U_{m}}{\partial x_{n} \partial x_{j}} \cdot \frac{\partial}{\partial x_{m}} \overline{u_{i} u_{n} \gamma} + \frac{1}{\rho} \left(\Delta \xi \frac{\partial}{\partial \xi_{j}} \overline{u_{i}' \gamma' p} \right)_{\mathbf{0}} + \left(\frac{\partial^{3}}{\partial \xi_{m} \partial \xi_{n} \partial \xi_{j}} \overline{u_{i}' \gamma' u_{m} u_{n}} \right)_{0} = 0$$
(2)

starting from the Poisson equation for pressure pulsations.

Employing the concept of discrete homogeneity [1] applicable to the terms which are differential operators with respect to ξ_i at the point $\xi = 0$ of two-point correlations as well as the quasinormality hypothesis of Millionshchikov the following relations can be obtained:

$$\frac{1}{\rho} \left(\Delta \xi \frac{\partial}{\partial \xi_j} \overline{u'_i \gamma' \rho} \right)_0 + \left(\frac{\partial^3}{\partial \xi_m \partial \xi_n \partial \xi_j} \overline{u'_i \gamma' u_m u_n} \right) = 0,$$

$$\left(\frac{\partial^3}{\partial \xi_m \partial \xi_n \partial \xi_j} \overline{u'_i \gamma' u_m u_n} \right)_0 = 0.$$
(3)

Moreover, in view of the condition

$$(L_{\text{or.}\dots,t},\overline{u_iu_j,\dots,u_m})^* = (L_{\text{or.}\dots,t},Q_{ij,\dots,m})_0$$

the following relation

$$\left(\frac{\partial^2}{\partial \xi_m \partial \xi_j} \ \overline{u'_i \gamma' u'_n}\right)_0 = \left(\frac{\partial^2}{\partial \xi_m \partial \xi_j} \ \overline{u'_i u_n}\right)_0 \ \frac{(\Delta \xi \ \overline{u'_i \gamma' u_n})_0}{(\Delta \xi \ \overline{u'_i u_n})_0} = \frac{1}{3} S_2 \ \overline{\rho}_{ss} \left(\overline{\gamma}^2 + 2\overline{q}^2 \ \frac{\overline{\rho}_{\gamma\gamma}}{\overline{\rho}_{ss}}\right)^{\frac{1}{2}} F^{in}_{mj},$$

can be obtained for the unknown term in Eq. (2) similarly as (20), where

$$F_{mj}^{in} = \frac{1}{2} \left(1 - 4\bar{c}_0 \right) \left(\delta_{mn} \delta_{ij} + \delta_{im} \delta_{jn} \right) - 2R_{in} \delta_{jm} + \bar{c}_0 \left(R_{im} \delta_{jn} + R_{mn} \delta_{ij} + R_{ij} \delta_{mn} + R_{jn} \delta_{im} \right).$$
(4)

Equation (2) together with (3) and (4) completes the system of Eqs. (1), (14)-(16) given in [1].

LITERATURE CITED

1. B. A. Kolovandin and I. A. Vatutin, Inzh. Fiz. Zh., 20, No.4 (1971).

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