where p is unknown pressure and the β 's are functions of the second and third invariants of the deformation rate tensor d_{ij} . The results of this paper clearly are restricted to the least general mathematically consistent linear characterization of the incompressible turbulent flow.

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Zusammenfassung

HINZE hat gezeigt, dass die Annahme eines turbulenten Viskositätskoeffizienten in Form eines Tensors zweiter Ordnung auf gewisse ungeklärte Schwierigkeiten führt, welche durch Annahme eines Tensors vierter Ordnung beseitigt werden können. Mittels einer systematischen Untersuchung werden diese Schwierigkeiten erklärt und die Notwendigkeit dargelegt, den turbulenten Viskositätstensor von vierter Ordnung anzunehmen.

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Addendum

The Breaking of Waves on a Sloping Beach. By Alan Jeffrey, Rolls-Royce Ltd., Derby, Great Britain, ZAMP 15 (1964), pp. 97–106

Page 103 should have contained a comment to the effect that Equations (32) to (34) are not exact. They actually represent an excellent approximation to the true result and were thus simplified to enable analytical results to be obtained.

The point at issue is that for waves advancing into a non-uniform state, $x_{\varphi 0} = x_{\varphi 0}(t)$ is a function of the time t and so $\tilde{X} = \tilde{x}_{\varphi} - x_{\varphi 0}(0)$, whilst the Jacobian at time t is $X(t) + x_{\varphi 0}(t)$. Thus, Equations (32) to (34) follow provided $x_{\varphi 0}(t) = x_{\varphi 0}(0) = \text{constant}$.

That this is substantially true in the problem studied can be seen by sketching the $C(+)$ characteristics in the (x, t) -plane and recalling that x_{φ} is the scale factor between x and φ .

The characteristics are virtually parallel straight lines unless m is large (c.f., Equation (11)), and then the breaking of waves occurs long before the shore line (and the curved part of the characteristics) is reached.

It is an easy matter to determine $x_{\varphi 0}(t)$ exactly and to modify Equations (32) to (34) accordingly, but it then becomes necessary to determine t_c numerically rather than analytically.

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Seit kurzem erscheint unter diesem Titel eine englische Übersetzung der Sektion «Theoretische Kybernetik» der russischen Zeitschrift «Referativnyy zhurnal, Matematika». Es handelt sich um ein Besprechungsorgan.

H. ZIEGLER