COMMENTS ON THE HYDRODYNAMICS RESEARCH OF OFFSHORE STRUCTURE

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Abstract

This paper presents three important research fields in the offshore structure hydrodynamics and its specific problems which have to be researched. These problems are as follows:

1. The improvements and the extensions of Morison equation for votex-induced lift, near-water surface wave slamming effects and near-water surface cyclic buoyancy forces, inclined member effects, member surface roughness effects, noncircular cylindrical sections, wave breaking, multiple members, time domain analysis and frequency domain analysis of wave forces, probabilistic wave force, etc.

2. The improvements of kinematics characterizations for velocities and accelerations of water particle, breaking wave, nonlinear wave and current interactions, short-crested and directional waves, and non-wave water column, etc.

3. The dynamic performances of fluid-structure interaction will be researched to develop a more comprehensible approach to the subject of forces on offshore structures instead of Morison equation.

Keywords *offshore structures; Morison equation; fluid-structure interaction*

水分传递对小麦面粉/水分系统的动态粘弹性参数的影响

提要 把小麦面粉/水分（100∶69）混合物置于流变测定仪机械分光计（Rheometrics mechanical spectrometer）的平行板装置中，试样各边未涂防止脱水的防水物。在 $\varepsilon<0.1$ 下，在试样制备30分钟后进行试验，在频谱约1—5Hz，最大频率约4—5Hz时将发生令人感兴趣的流变不平衡现象。它表现为存储模量 G' 的值和耗损模量 G'' 的值的明显的下降。这种下降的大小随着面粉中淀粉/蛋白质比值的增大而增大。当面团水合时间增长时，这种下降显著减小。加入起酥油时消除了这种下降，但加入其他普通面团拼料时并不消除这种下降。增大应变幅度或加入尿素也消除这种下降。

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