

# A Numerical Study of the Flow around Sphere For Different Reynolds Numbers

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النسبة المئوية لجهد الباحث في إعداد البحث (إذا كان البحث مشتركاً): التوقيع:

•ترفق نسخة البحث المنشور مأخوذة من المجلة العلمية أو مجلد المؤتمر مباشرة.

## ملخص البحث :

The flow, around a stationary sphere, is investigated numerically at Reynolds number ( $R_e$ ) = 300 and 10000 based on the sphere diameter ( $D$ ) and the free stream velocity. The diameter of the computational fluid domain around the sphere is  $29D$ . The sphere drag coefficient ( $C_D$ ), was calculated in the current study at the two ( $R_e$ ) different grids were investigated in this study, where the unstructured tetrahedral mesh elements were used for meshing both the sphere and its computational domain. Various turbulence models were used in this study as k-epsilon ( $k-\epsilon$ ), k-omega ( $k-\omega$ ) and large eddy simulation (LES). The numerical results were compared with the available experimental results