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ME M311: Computational Methods to Viscous Flows

Video Assignment 01

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**Problem Statement:** Watch all the video lectures, and derive the governing equation for the kinetic energy, defined as  $k = 1/2(u^2 + v^2 + w^2)$ . The technique involves multiplying the x-momentum equation by the u velocity, y-momentum by the v velocity, and z-momentum equation by the w velocity, and eventually add all three equations up. Show your derivation process.

**Solution:**

First, we must start with the momentum equations as mentioned above.