

An alternative interpretation of the inner product

1. Is $(A\mathbf{u})^T \mathbf{v} = \mathbf{u}^T (A^T \mathbf{v})$ for a real matrix A ? Justify your answer.
2. Is $(A\mathbf{u})^* \mathbf{v} = \mathbf{u}^* (A^* \mathbf{v})$ for a complex matrix A ? Justify your answer.