

## **Abstract:**

The historical development of uncertainty relation, beginning with first Heisenberg's thoughts of uncertainty principle is summed up in this thesis. After proving validity of Schwarz inequality general uncertainty relation for two hermitian operators is obtained, and from this general version the validity of Heisenberg uncertainty relation is then proved. The most important part of this work is the obtention of two new uncertainty relations, which are stronger than Heisenberg or Robertson-Schrödinger uncertainty relation, and their specific form for two examples – a free particle in a state described by the gaussian wave packet and the linear harmonic oscillator with a wave function in the shape of gaussian packet.