

## Quantum Mechanical Hilbert Transformation for Normally Ordering Coulomb Potential - Type Operators

FAN Hong-Yi<sup>1,2</sup> and FU Liang<sup>3</sup>

<sup>1</sup> Department of Materials Science and Engineering, University of Science and Technology of China, Hefei 230026, China

<sup>2</sup> Department of Physics, Shanghai Jiao Tong University, Shanghai 200030, China

<sup>3</sup> Special Class for the Gifted Young, University of Science and Technology of China, Hefei 230026, China

(Received: 2005-4-18; Revised: )

**Abstract:** We show that the technique of integration within an ordered product of operators can be extended to Hilbert transform. In so doing we derive normally ordered expansion of Coulomb potential-type operators directly by using the mathematical Hilbert transform formula.

PACS: 03.65.-w

**Key words:** quantum Hilbert transform, normally ordering, Coulomb potential

[\[Full text: PDF\]](#)

Close