

# Decoherence, Classical Properties and Entanglement of Quantum Systems

Ph. Blanchard and R. Olkiewicz<sup>a</sup>

Physics Faculty and BiBoS, University of Bielefeld, 33615 Bielefeld, Germany

<sup>a</sup> Institute of Theoretical Physics, University of Wrocław, 50-204 Wrocław, Poland

Reprint requests to Prof. Ph. B.; Fax: 0049 521 1066455,

E-mail: blanchard@physik.uni-bielefeld.de

Z. Naturforsch. **56 a**, 124–127 (2001); received February 8, 2001

*Presented at the 3rd Workshop on Mysteries, Puzzles and Paradoxes in Quantum Mechanics, Gargnano, Italy, September 17 - 23, 2000.*

We discuss the properties of decoherence and its role in the appearance of classical properties in open quantum systems. In particular, it is used for classification of pure states with respect to their ability to persist despite the environmental monitoring.

*Key words:* Decoherence; Measurement Problem; “Classical” States; Entanglement.