MAURO C. ANDREASSA

Com sólida formação em Física pela PUC-SP, construiu uma carreira ao longo de 46 anos na indústria sendo a maior parte na Ford Motor Co., VW do Brasil e cadeia de suprimentos. Alcançou posições executivas em diversas áreas, incluindo qualidade, manufatura, engenharia de produto e veicular, manutenção, laboratórios, marketing de peças, finanças e desenvolvimento da cadeia de suprimentos.

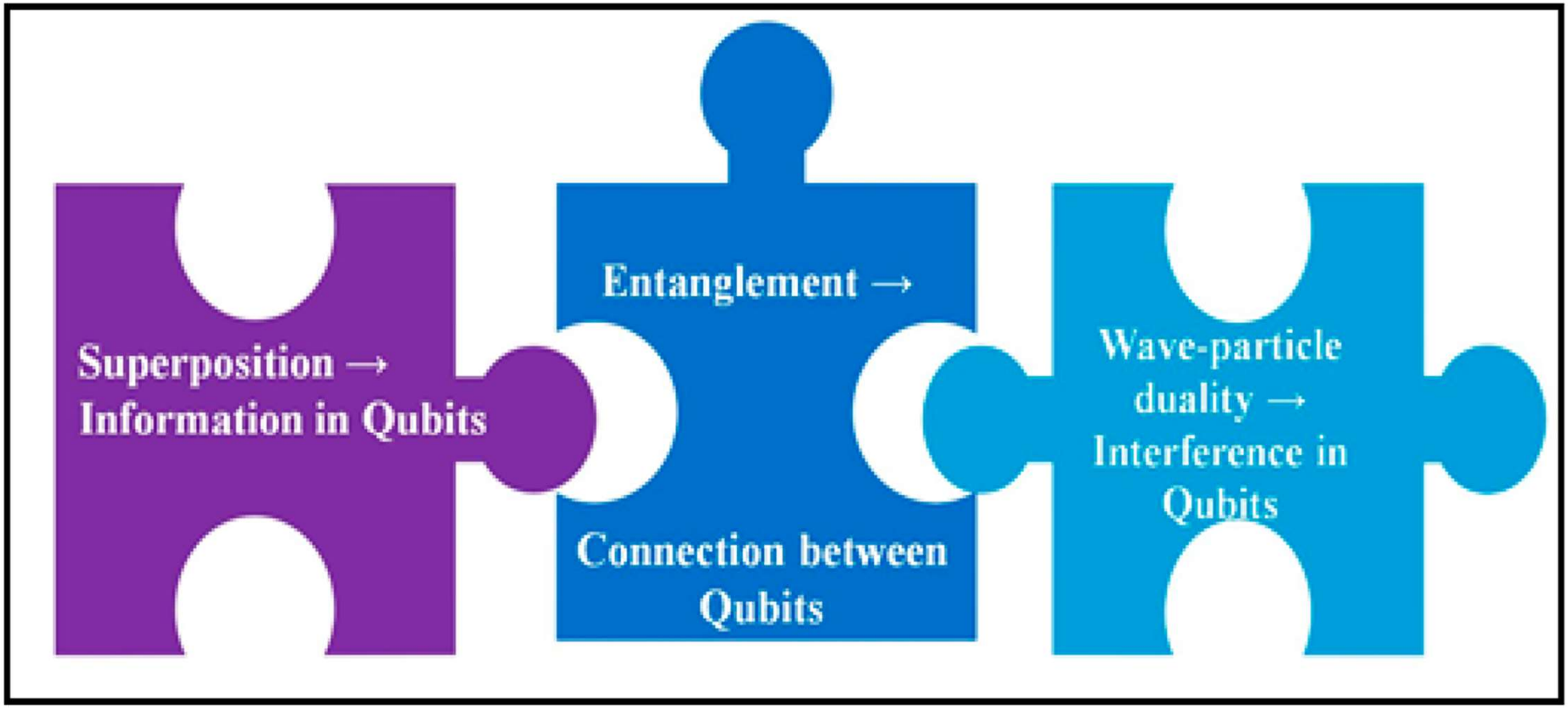
Paralelamente, desenvolveu uma carreira acadêmica que já soma 26 anos, contribuindo como professor em cursos de graduação e pós-graduação em entidades como IMT (Instituto Mauá de Tecnologia), FATEC-SP, SENAI-SP, FAC (Faculdade do Comércio) e PUC-MG. Atualmente, atua como palestrante, professor, consultor, instrutor, conselheiro de empresas e mentor de carreiras.

Acompanha de perto os avanços da inteligência artificial (IA) e da computação quântica. É membro da Associação Americana de Inteligência Artificial e exerce a função de secretário da Comissão de Tecnologias Quânticas da ABNT, reafirmando seu compromisso com o futuro da ciência e da tecnologia. Também exerce a função de Diretor de Inteligência Artificial, Computação Quântica e Tecnologias Emergentes da ANEFAC – Associação Nacional de Executivos.

Applications of Quantum Computing

- Artificial Intelligence
- Better Batteries:
- Cleaner Fertilization
- Cybersecurity
- Drug Development

- Electronic Materials Discovery
- Financial Modeling
- Solar Capture
- Traffic Optimization
- Weather Forecasting and Climate Change

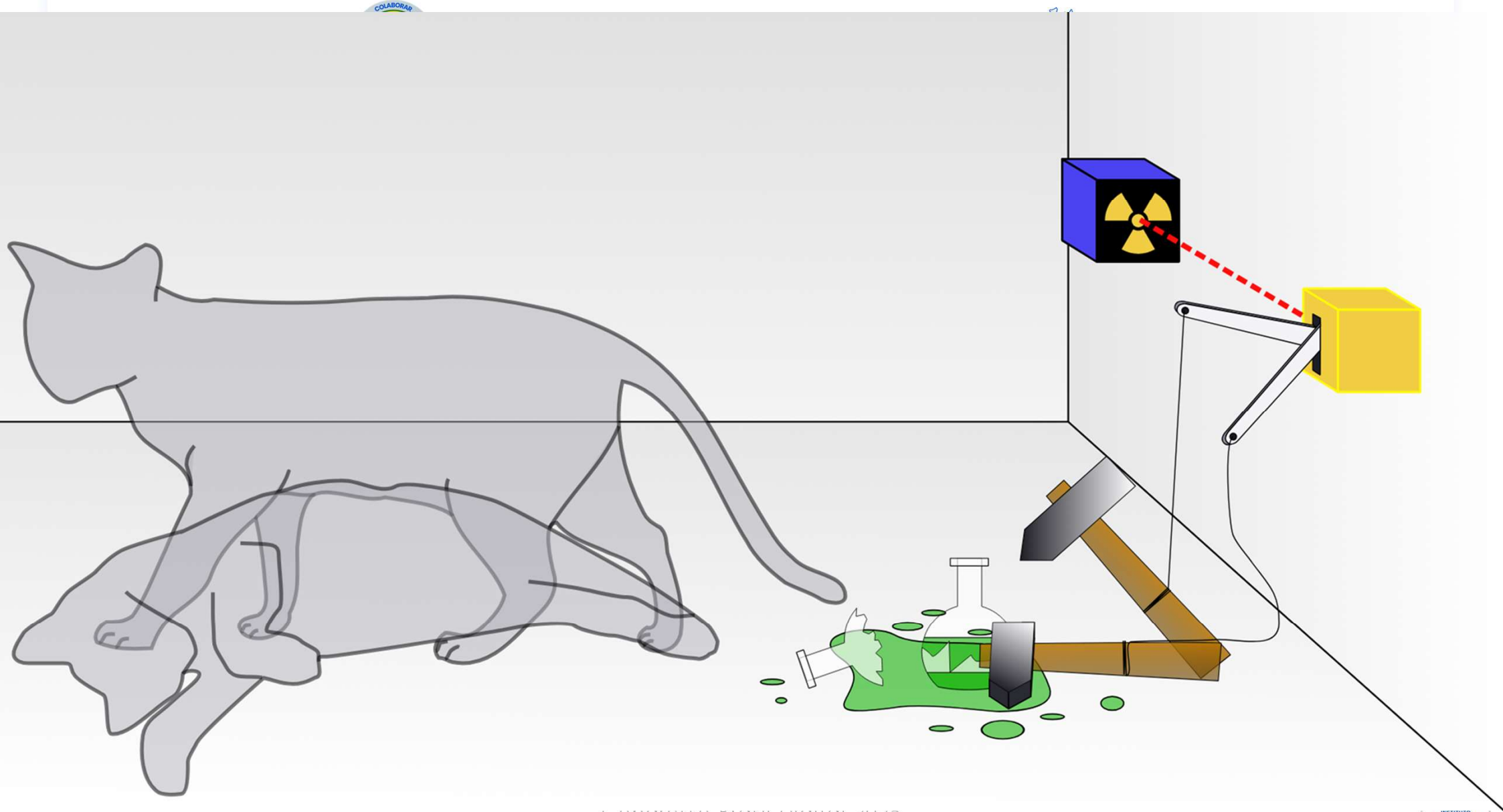

Superposition →
Information in Qubits
Entanglement →
Connection between
Qubits
Wave-particle
duality →
Interference in
Qubits

Die Naturwissenschaften 1935. Volume 23, Issue 48.

The Present Status of Quantum Mechanics

By E. Schrödinger, Oxford.

Contents



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ON THE EINSTEIN PODOLSKY ROSEN PARADOX*

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(*Received* 4 *November* 1964)

I. Introduction

THE paradox of Einstein, Podolsky and Rosen [1] was advanced as an argument that quantum mechanics could not be a complete theory but should be supplemented by additional variables. These additional variables were to restore to the theory causality and locality [2]. In this note that idea will be formulated mathematically and shown to be incompatible with the statistical predictions of quantum mechanics. It is the requirement of locality, or more precisely that the result of a measurement on one system be unaffected by operations on a distant system with which it has interacted in the past, that creates the essential difficulty. There have been attempts [3] to show that even without such a separability or locality requirement no "hidden variable" interpretation of quantum mechanics is possible. These attempts have been examined elsewhere [4] and found wanting. Moreover, a hidden variable interpretation of elementary quantum theory [5] has been explicitly constructed. That particular interpretation has indeed a grossly nonlocal structure. This is characteristic, according to the result to be proved here, of any such theory which reproduces exactly the quantum mechanical predictions.

Experimental quantum teleportation

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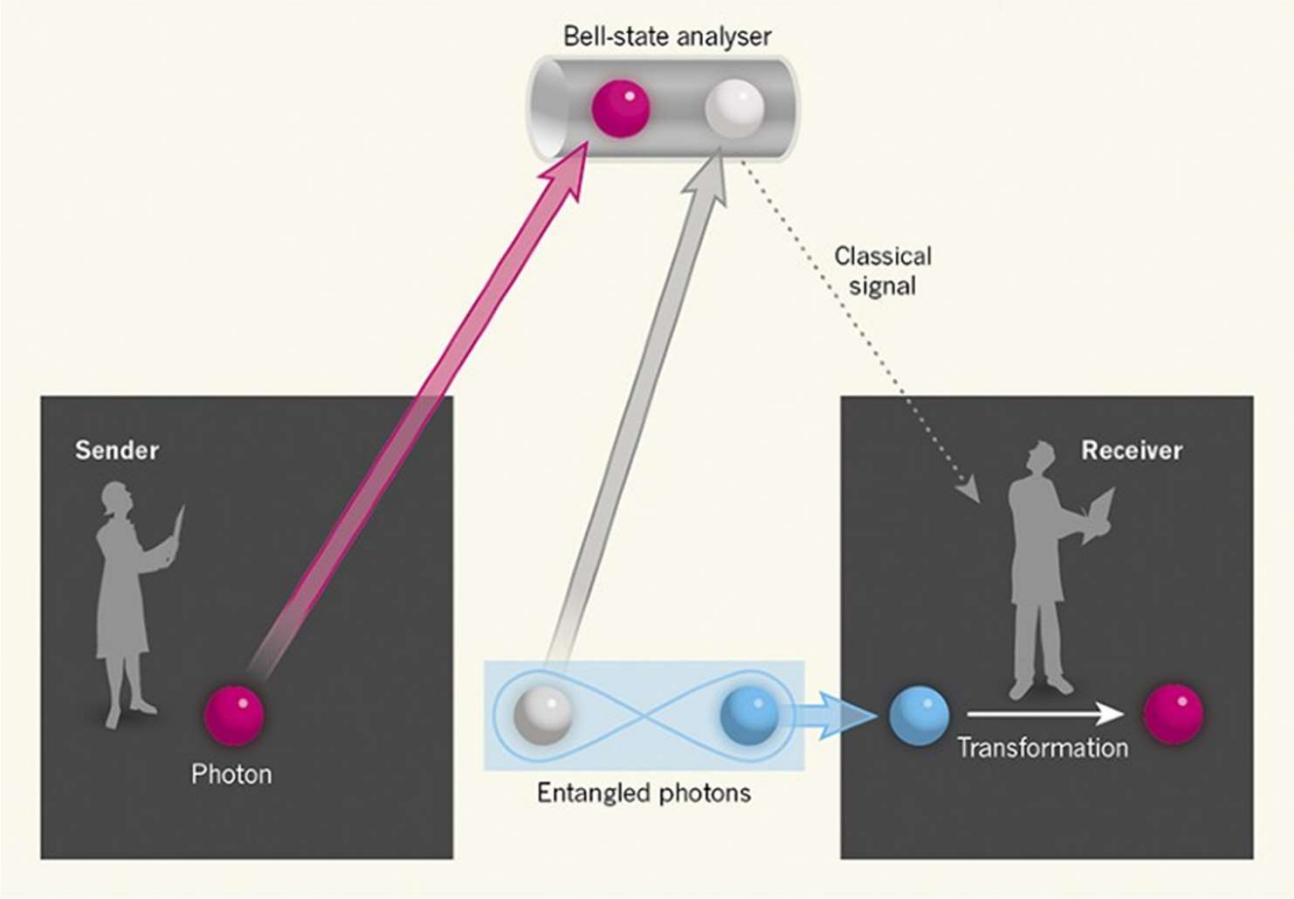
Institut für Experimentalphysik, Universität Innsbruck, Technikerstr. 25, A-6020 Innsbruck, Austria
(Dated: December 11, 1997)

Quantum teleportation – the transmission and reconstruction over arbitrary distances of the state of a quantum system – is demonstrated experimentally. During teleportation, an initial photon which carries the polarization that is to be transferred and one of a pair of entangled photons are subjected to a measurement such that the second photon of the entangled pair acquires the polarization of the initial photon. This latter photon can be arbitrarily far away from the initial one. Quantum teleportation will be a critical ingredient for quantum computation networks.


Bell-state analyser
Classical signal
Sender
Receiver
Photon
Entangled photons
Transformation

RECHERCHES SUR LA THÉORIE DES QUANTA

Par M. Louis de BROGLIE

Annales de Physique — 10e Série — Tome III — Janvier-Février 1925

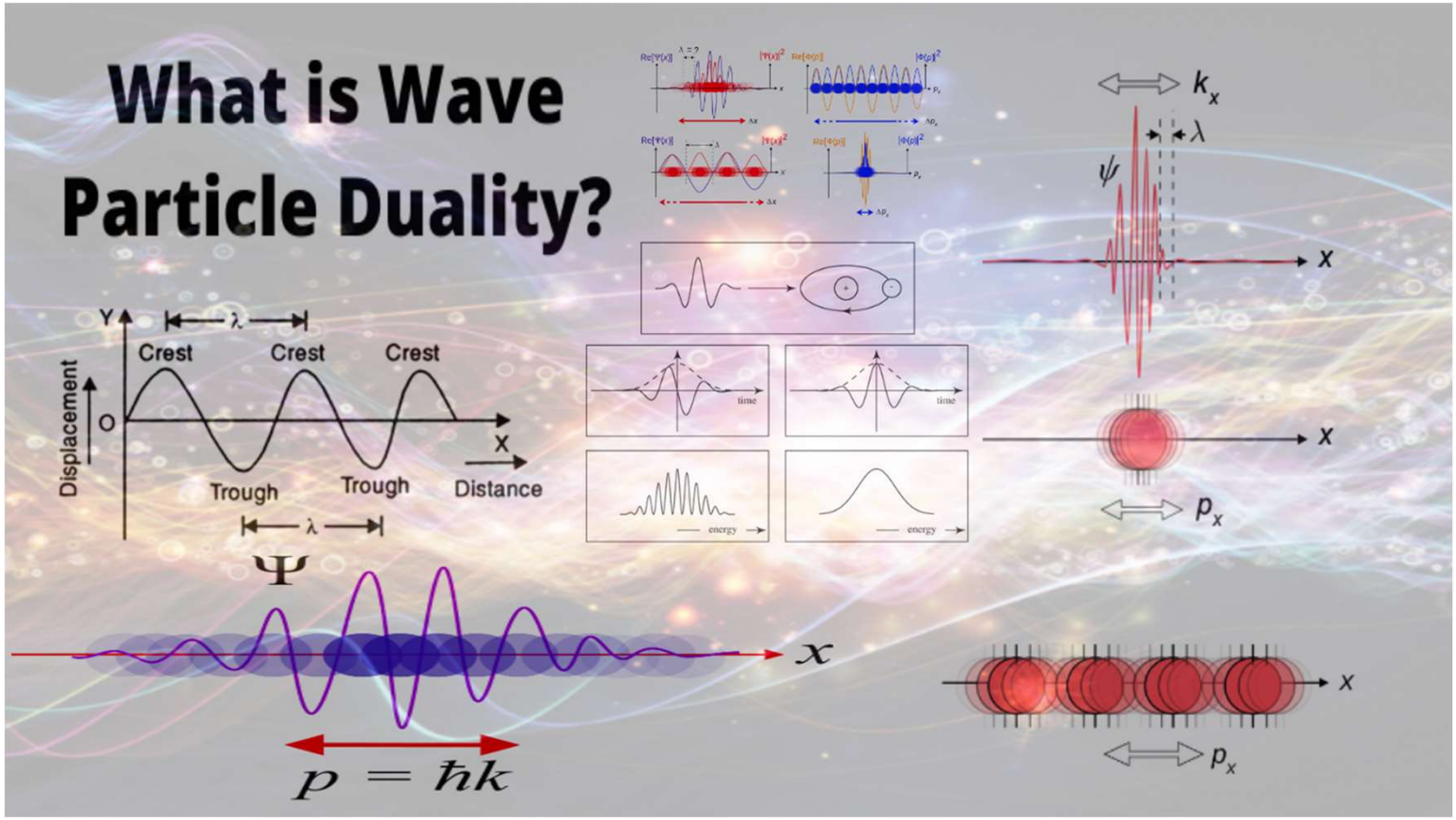
RECHERCHES SUR LA THÉORIE DES QUANTA

Par M. Louis de BROGLIE

SOMMAIRE. — L'histoire des théories optiques montre que la pensée scientifique a longtemps hésité entre une conception dynamique et une conception ondulatoire de la lumière; ces deux représentations sont donc sans doute moins en opposition qu'on ne l'avait supposé et le développement de la théorie des quanta semble confirmer cette conclusion.

Guidé par l'idée d'une relation générale entre les notions de fréquence et d'énergie, nous admettons dans le présent travail l'existence d'un phénomène périodique d'une nature encore à préciser qui serait lié à tout morceau isolé d'énergie et qui dépendrait de sa masse propre par l'équation de Plank-Einstein. La théorie de relativité conduit alors à associer au mouvement uniforme de tout point matériel la propagation d'une certaine onde dont *la phase* se déplace dans l'espace plus vite que la lumière (ch. I.)

Pour généraliser ce résultat dans le cas du mouvement non uniforme, on est amené à admettre une proportionnalité entre le vecteur Impulsion d'Univers d'un point matériel et un vecteur caractéristique de la propagation de l'onde associée dont la composante de temps est la fréquence. Le principe de Fermat appliqué à l'onde devient alors identique au principe de moindre action appliqué au mobile. Les rayons de l'onde sont identiques aux trajectoires possibles du mobile (ch. II.)


What is Wave Particle Duality?
Y
λ
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Crest
Crest
Displacement
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X
Trough
Trough
Distance
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time
energy
energy
k_x
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Obrigado!