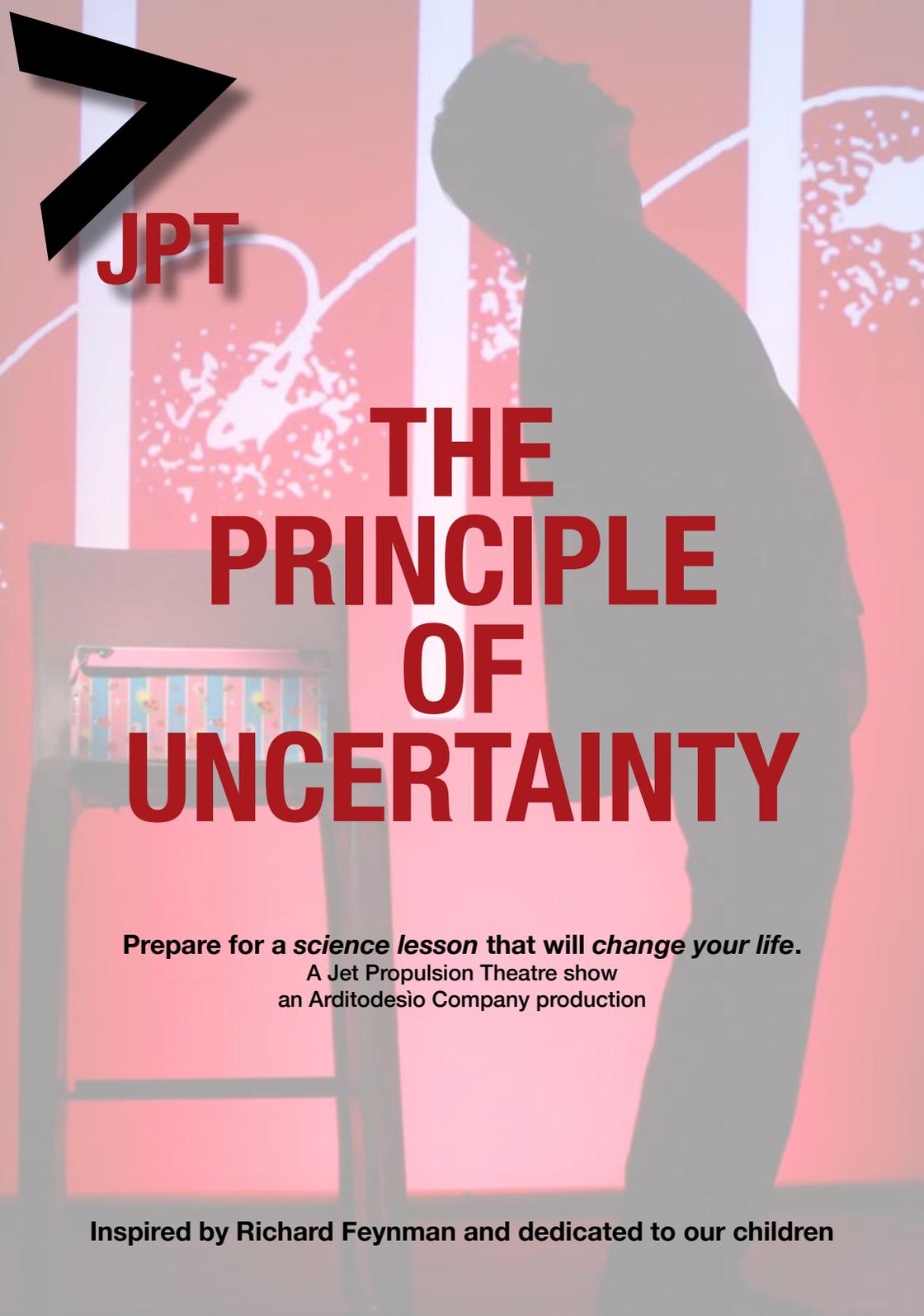




**JPT**



**THE  
PRINCIPLE  
OF  
UNCERTAINTY**

**Prepare for a *science lesson* that will *change your life*.**

A Jet Propulsion Theatre show  
an Aritodesio Company production

**Inspired by Richard Feynman and dedicated to our children**

**A quantum mechanics lecture. A man who loves the Universe. The scientific method that clashes with pseudoscience. A secret...**

# **THE PRINCIPLE OF UNCERTAINTY**

Inspired by **Richard Feynman** and **dedicated to our children**

With **Andrea Brunello** and **Enrico Merlin**

Text by **Andrea Brunello**

Music by **Enrico Merlin**

Directed by **Andrea Brunello** and **Michela Marelli**

Lights and technical support by **Andrea Lucchi**

Drawings by **Salvatore Crisà**

In collaboration with  
The **Physical Science Communication Laboratory** of the physics Department of the  
**University of Trento** (Italy)

A professor walks through some of the most **mysterious concepts of quantum mechanics** (the double slit experiment, Schroedinger's cat, the many-worlds of Hugh Everett III) to present a wonderful world made of mysteries and paradoxes. But in the midst of all that awe-inspiring joy lies **a disquieting truth**. The lecture turns into a confession that mixes some of the most advanced ideas of quantum mechanics with **the professor's secret**, pushing him into an extreme, final decision.

To support the stage work of Andrea Brunello there is the musician Enrico Merlin. The connection between voice and music, text and sounds brings the audience to experience a **deep theatrical experience** without ever denying the **rigorous scientific contents** of the play.

*It must be seen, even if you think you can't understand physics. (Silvia Tozzi - Oubliettemagazine.com)*

*Prepare for a science lesson which will leave you dabbling your eyes. (Three Weeks - Edinburgh)*

*Thought provoking fusion of science, music and theatre [...] Can humans and bees both appreciate beauty? Can the notion of parallel universes help us deal with death? The piece challenges you to question everything in a way that is fresh and provocative. (Sally Stott, The Scotsman)*

*I have been literally fascinated by this performance: a simple and yet deep and moving show. A very empathic play and intellectually brilliant. (Emanuela Dal Pozzo, Traiettorie.org)*

**Keywords: Richard Feynman, Theatre, Quantum Mechanics, Wonder, Beauty, Double Slit Experiment, Schroedinger, Cats, Parallel Universes, Live Music, Hope, Galaxies, Probability, Scientific Truth...**

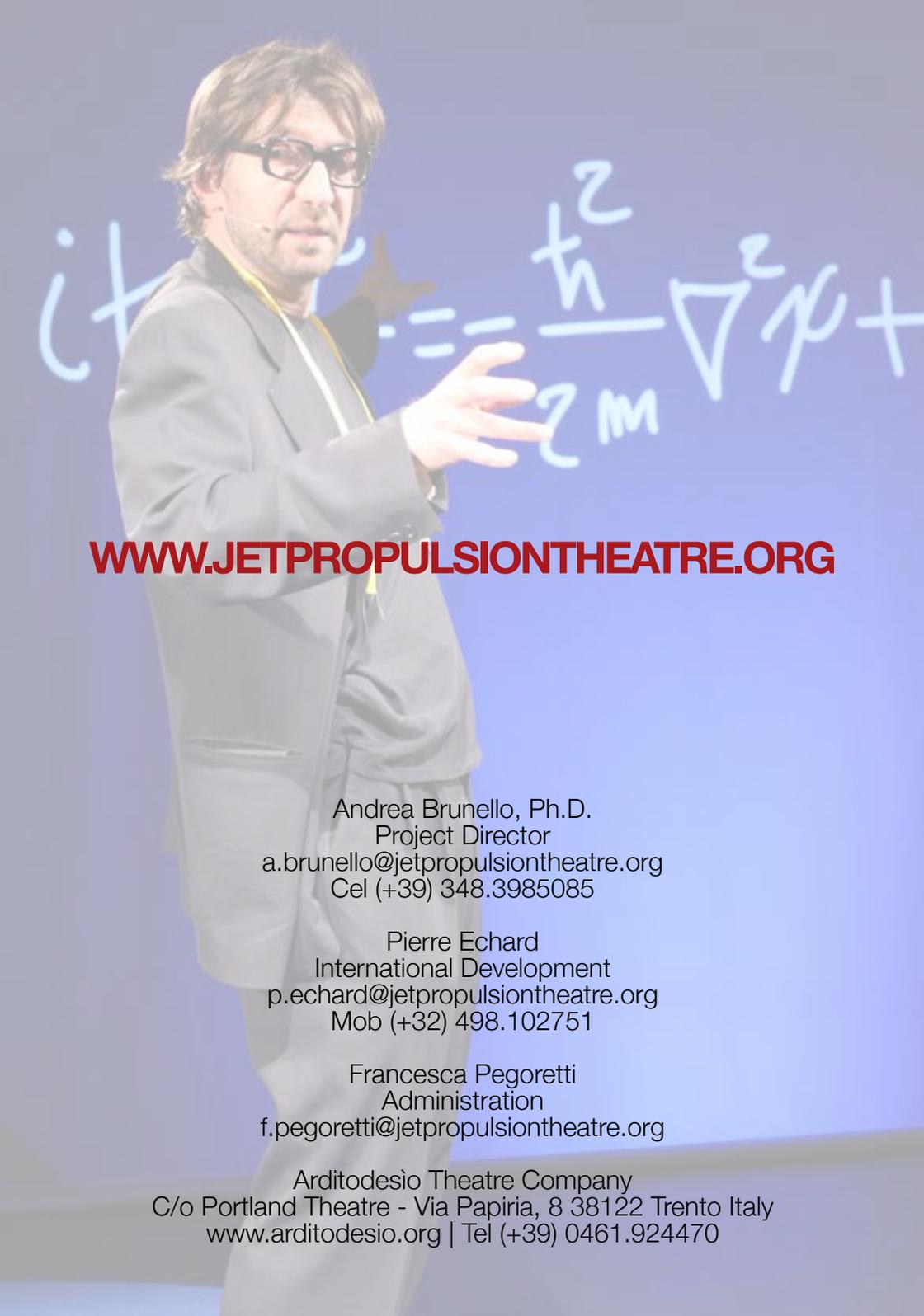
It is quite amazing to think of how 20th century physics has shaped our perception of the world. In particular **Relativity** and **Quantum Mechanics** have profoundly changed the way we connect with reality. And yet often we connect with these ideas only through science fiction or highly spectacular popularizations. Nevertheless, **actual scientific facts can be even more surprising, exciting and wonderful** than the creations springing from the imagination of clever men and women. Because, using **Richard Feynman's** words, "the imagination of Nature is much bigger than the imagination of man!"

The Principle of Uncertainty wants to be **a celebration of human ingenuity** and a testimonial to the deep appreciation that we have for all that is "Nature": from our amazing and mysterious Universe all the way down to bees and flowers and ultimately all that can be seen, appreciated and understood **using our intelligence**.

Richard Feynman is a great inspiration for this work. His ideas about science, the role of science, and the importance of science education have profoundly shaped the way this play has been written and performed. But The Principle of Uncertainty goes beyond Feynman as **it explores the boundaries between our rational and irrational components**: how does a rational being deal with a life changing event? What short circuit happen in the mind of a person used to rationalize everything, when the emotion is too powerful to bear? In writing this play I wanted to explore these issues and find possible answers in... Quantum Mechanics! And I found a lot of answers. Most importantly because at the heart of Quantum Mechanics is the concept of probability and the idea that... **You can never be certain. Certainty is not of this world.**

The play touches upon so many themes that it becomes **a powerful tool for creating curiosity and wonder**: people want to know more about the science, about the mechanisms of scientific discovery and ultimately about the power of our creative minds. Using the words of a teacher and researcher from the University of Milan: **"It was brilliant! Congratulations to the actor who has explained difficult concepts with simplicity and with such enthusiasm... that all teachers should take example from him and become so engaging."** The Principle of Uncertainty is a **one of a kind show**. It is the fruit of a happy intuition relating theatre to scientific ideas. People attending the show leave the theatre with a changed perception relating our existence to the natural world and to our ability to really comprehend it. **It pushes each one of us to follow our potential to the fullest**. Through The Principle of Uncertainty I have tried to **connect the boundaries that separate theatre and science**, creating something that, in my opinion, is a novel kind of play, **theatre infused with science**. This play has been the spark giving birth to the **Jet Propulsion Theatre project**.

The Principle of Uncertainty has been **touring Europe since 2013**. It has been performed, in its "full" and "unplugged" versions, in **Italian** and in **English**, in venues ranging from the big performance halls to the smallest of theatres. Starting from the fall of 2017 it will be played in **French** as well. Most importantly, **the play continues to be requested** and we predict that it will be "on the road" for a long time. (**Andrea Brunello**, June 2017)

A man with glasses and a grey suit is pointing towards a screen. The screen displays mathematical equations, including the Schrödinger equation: 
$$i\hbar \frac{\partial}{\partial t} \Psi = -\frac{\hbar^2}{2m} \nabla^2 \Psi + V\Psi$$

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