

## INVITATION

DIFFUSIVE BODIES

Science Communication: PHYSICS x DANCE

Performances: 26/2/2023 at 6pm & 27/2/2023 at 7pm

Ort: Main Ceremonial Hall, University of Vienna  
(Universitätsring 1, 1010 Vienna)

*„In classical physics, science started from the belief – or should we say, from the illusion? – that we could describe the world, or at least parts of the world, without any reference to ourselves.“*

~ Werner Heisenberg ~

How could we transfer physical concepts like coherence, (dis-)continuity, superposition, absorption or diffusion into the language of dance?

How could we project physical observations from the microscopic world to the macro level of dancing bodies?

For this purpose, Katharina Holzweber, professional dancer and physicist, has accompanied 7 dancers and 5 dance students from the Music and Arts University of Vienna (MUK) in the winter term 2022/23 choreographically as well as scientifically to create a full-length dance piece on the basis of physical concepts and perspectives.

The center of the common approach has been the research work of the Sub Group *Dynamics of Condensed Systems* of the University of Vienna/Faculty of Physics.

The group, led by Univ.-Prof.Mag.Dr. Herwig Peterlik and a.o.Univ.-Prof.Mag.Dr.Bogdan Sepiol, is i.a. dedicating its work to the investigation of atomic dynamics in various solids and is, depending

on the measurement technique and the sample material, confronted with observation-induced effects that superpose intrinsic properties. The latter is not just an anchor point in Katharina's doctoral thesis, but has also been profoundly debated with the dancers. The question of physical observation that ranges, according to the size of the observed object, from a neglectable small influence through the observation (measurement arrangement) itself in the classical picture to a pure subjective and even forced one in the regime of quantum mechanics, is a question of a snapshot in time, of a tiny part of a complex system, or as Werner Heisenberg already expressed it in the beginning of the 20th century, *is a question of the interaction between the observed object with its environment, i.e. with the rest of the world, passing from potentialities to actualities.*

Concept/Scientific & Artistic Advice

Katharina Holzweber

Dance

Hannah Bolldorf, Bianca Braunesberger, Florian Decker,  
Christina Ebner, Kirin Espana, Patrick Gutensohn,  
Elisa Hauer, Varvara Kalupina, Simeon Ohlsen,  
Nicholas Sambou, Paulina Schabacker, Jana Würleitner

Sound Design

Maximilian Einfalt, Daniel Herzmanek, Thomas Nagl

Scientific & Artistic Supervision

Ao. Univ.-Prof. Dr. Bogdan Sepiol & Univ.-Prof. Nikolaus Selimov

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