



QI2016 Conference Program

10th International Quantum Interaction Conference

San Francisco State University
Downtown Campus
835 Market St
San Francisco, California

Wednesday, July 20th

Room 609

09:00–09:15 **Welcome**
Acacio de Barros, SFSU

09:15–10:15 **Keynote**
Bas van Fraassen
Distinguished Professor of Philosophy, SFSU
Title: Interpretations of QM with applications for formal epistemology

10:15–10:45 **Coffee Break**

Quantum Cognition I
Chair: Dominic Widdows

10:45–11:15 Irina Basieva and Andrei Khrennikov
Testing boundaries of applicability of quantum probabilistic formalism to modeling of cognition: metaphors of two and three slit experiments

11:15–11:45 Stuart Hameroff
Does Chomsky's 'Universal Grammar' for Language Derive from Quantum Pathways in Brain Microtubules?

11:45–12:15 J. Acacio de Barros, Carlos Montemayor and Leonardo Guimarães De Assis
Contextuality in the Integrated Information Theory

12:30–14:00 **Lunch Break**

Quantum Cognition II

Chair: Peter Bruza

14:00–14:30 J. Acacio de Barros, Leonardo Guimarães De Assis and Petr Bob
Is Stress Quantum-Like?

14:30–15:15 Diederik Aerts, Lyneth Beltran, Massimiliano Sassoli de Bianchi,
Sandro Sozzo and Tomas Veloz
Quantum cognition beyond Hilbert space

15:15–15:45 Peter Beim Graben and Reinhard Blutner
Toward a Gauge Theory of Musical Forces

15:45–16:00 **Coffee Break**

Language and Applications

Chair: Ru Zhang

16:00–16:30 David Windridge and Raja Nagarajan
*Decision Fusion via Attribute Bootstrap Aggregation in Quantum
Machine Learning*

16:30–17:00 Yaared Al-Mehairi, Bob Coecke and Martha Lewis
Categorical Compositional Cognition

17:00–17:30 Trevor Cohen, Dominic Widdows, Jason A. Vander Heiden,
Namita T. Gupta and Steven H. Kleinstejn
*Graded Vector Representations of Immunoglobulins Produced in
Response to West Nile Virus*

Thursday, July 21st

Room 609

Special Session on Contextuality and Foundations of Probability

09:15–10:15 **Keynote**

Ehtibar Dzhafarov

Professor of Psychology, Purdue University

Title: *Contextuality-by-Default 2.0*

10:15–10:30 **Coffee Break**

Chair: Reinhart Blutner

10:30–11:15 **Invited Speaker**

Francisco Antonio Doria

Professor Emeritus at COPPE, Federal University of Rio de Janeiro, Brazil

Title: *Quantum mechanics, undecidability and Gödel incompleteness*

11:15–11:45 Ru Zhang and Ehtibar Dzhafarov

Testing Contextuality in Cyclic Psychophysical Systems of High Ranks

11:45–12:15 Peter Bruza

Probabilistic programs: Contextuality and relational database theory

12:15–14:00 **Lunch Break**

Chair: Martha Lewis

14:00–14:45 **Invited Speaker**

Pawel Kurzynski

Professor of Physics, Adam Mickiewicz University, Poland

Title: *Various physical aspects of contextuality*

14:45–15:15 Victor Cervantes and Ehtibar Dzhafarov

Exploration of Contextuality in a Psychophysical Double-Detection Experiment

15:15–15:30 **Coffee Break**

Chair: Gary Oas

15:30–16:15 **Invited Speaker**

Federico Holik

Researcher, CONICET, Argentina

Title: *On the interpretation of probabilities in generalized probabilistic models*

16:15–16:45 Mark Burgin

An Introduction to Symmetric Inflated Probabilities

16:45–17:00 **Coffee Break**

Poster session

17:00–18:00 Robert Prentner. *Decompositional Mereology and its Projector Structure*

Ismael Rafai, Sebastien Duchene, Eric Guerci, Ariane Lambert-Mogiliansky and Fabien Mathy. *Memory vs mental picture : Can learning be quantum?*

Scott Malec, Trevor Cohen, Sándor Darányi and Dominic Widdows. *Using Graded Vectors to Represent the Structure of Russian Magic Tales*

Conference dinner

19:00–20:30 M.Y. China, Westfield Centre, Under the Dome

Friday, July 22nd

Room 609

09:15–10:15 **Keynote**

Louis Narens

Professor of Psychology, UC Irvine

Title: *Rationality and non-boolean probability theory*

10:15–10:30 **Coffee Break**

Quantum-Like Measurements

Chair: Irina Basieva

10:30–11:00 Jacob Denolf

A first attempt at ordinal projective measurement

11:00–11:30 François Dubois and Zeno Toffano

Eigenlogic: a Quantum View for Multiple-Valued and Fuzzy Systems

11:30–12:00 Kevin Dunne

A New Perspective on Observables in the Category of Relations: a Spectral Presheaf for Relations

12:00–14:00 **Lunch Break**

Fundamentals

Chair: Trevor Cohen

14:00–14:30 Hou Yau

Probabilistic Nature of a Field with Time as a Dynamical Variable

15:00–15:30 Aditya Joshi, Johan Halseth and Pentti Kanerva

Language Geometry using Random Indexing

15:30–15:45 **Coffee Break**

Closing Session

15:45–16:00 Best Student Papers Awards

16:00–16:30 General discussion