Duality in contemporary mathematics — philosophical aspects

Workshop at the Bergische Universität Wuppertal, September 3-5, 2015
organized by Ralf Krömer and David Corfield
Supported by MathObRe, IZWT, BUW

Programme

Thursday, Sept. 3

14:00   Opening

14:15   Gerhard Heinzmann (LHSP-Archives Poincaré, Nancy)
        The MathObRe project: a short presentation

14:30   Pierre Cartier (IHES, Bures-sur-Yvette)
        Beyond Pontrjagin duality: various reincarnations in group theory, topology
        and algebraic geometry

15:45   Coffee break

16:15   Olivia Caramello (Paris VII/IHES)
        Duality and Morita-equivalence: a topos-theoretic perspective

17:30   Urs Schreiber (Eduard Čech Institute, Prague)
        Duality of monads in geometric homotopy theory

19:00   Dinner in the *Bergisches Zimmer* (on Campus)

Friday, Sept. 4

9:30   Steve Awodey (Carnegie Mellon University, Pittsburgh)
        Logical duality: Stone, Grothendieck, Lawvere, Makkai, (and beyond)

10:45   Coffee break

11:15   Kohei Kishida (University of Oxford)
        tba

12:30   Lunch in the *Mensa*

14:30   Sebastian de Haro (University of Cambridge and University of Amsterdam)
        Dualities in Physics: An Example from String Theory

15:45   Coffee break

16:15   Offer Shai (Tel Aviv University)
        Duality in engineering, rigidity theory and biology.

20:00   Dinner in the restaurant *Alaturka* (downtown)

Saturday, Sept. 5

9:30   Colin McLarty (Case Western University, Cleveland)
        Looking at a distinction between formal and concrete dualities

10:45   Coffee break

11:10   Ralf Krömer (Bergische Universität Wuppertal)
        Direct and inverse limits, and the early history of category-theoretic duality

12:00   David Corfield (University of Kent, Canterbury)
        Duality as a Category-Theoretic Concept

12:45   General discussion and farewell