

# COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS  
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CANADA

## THE METHOD OF CYCLIC PROJECTIONS — THE INCONSISTENT CASE

### **Abstract**

The method of cyclic projections is an algorithm for solving convex feasibility problems in Hilbert space: a starting point is projected onto the first set, the resulting point onto the second, and so on, until the last set is visited and the cycle starts anew.

It is well known that this method converges weakly to a point in the intersection of the constraints — assuming there is one! The inconsistent case, however, is much less clear and will be the focus of my talk. I will present classical and recent results, and intriguing open problems.

**372 Science and Engineering Building**  
**Thursday, September 27th, 2001**  
**3:00 to 4:00 P.M.**  
**(Refreshment at 2:30 to 3:00 P.M. in Room 368,**  
**Science and Engineering Building)**

### **About the speaker**

Professor Heinz Bauschke is an Assistant Professor in the Department of Mathematics and Statistics at University of Guelph. Before joining University of Guelph, he was a faculty member at Okanagan University College. Professor Bauschke studied at Goethe University, University of Waterloo, and he earned his Ph.D. from Simon Fraser University in 1996 under the supervision of Jonathan M. Borwein. His thesis *Projection Algorithms and Monotone Operators* won the Governor General's Gold Medal at Simon Fraser University. Professor Bauschke has over twenty publications in journals such as *Mathematics of Operations Research*, *Journal of Optimization Theory and Applications*, *Mathematical Programming*, *Journal of Convex Analysis*, and *Journal of Approximation Theory*. His current research interests include Convex Optimization, Functional Analysis, Symbolic Computing, and Medical Imaging. His work is supported by grants from Natural Science and Engineering Research Council of Canada.