Center for Biomedical Research

Mathematics and Logic for BioTech Modeling

Metrics for Image Classification and Data Analysis

- Integral Metrics provably more sensitive to feature variations than traditional hyperspace metrics used (e.g., Hausdorff metric) in image analysis
- Quantifying errors in proposed sketches or maps as compared to an exemplar

Algebra, Logic, & topology

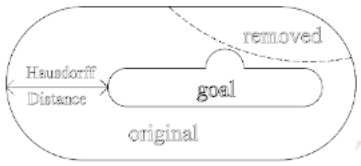
- Dioid-based Neural Networks Generalize Max-Plus Algebra Approaches for Discrete Event Dynamical Systems
- Simple structures unify generalized metric notions

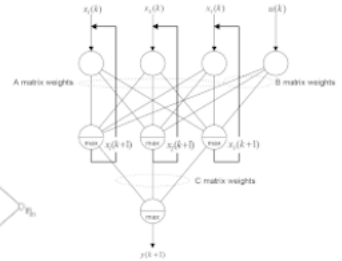
Economics and Public Policy

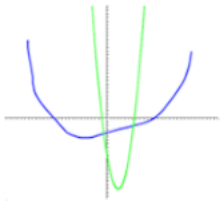
- Merely increasing emission taxes may lead to perverse incentives

Analysis and Chemistry

- The Complete Iterative Inversion Method works very well on Lennard-Jones energy profiles, but almost exclusively so



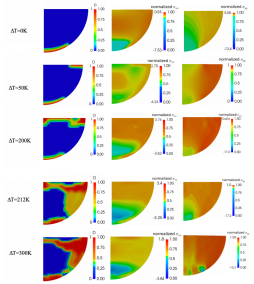




⊙	−1	0	1
−1	−1	−1	0
0	−1	0	1
1	0	1	1

Theorem 4.3 *Let φ_0 and φ be commensurable monomial potentials. Then* $\mathrm{CIIM}(\varphi_0, \varphi)$ *converges to φ in a single step.*

Proposition 2 *As emission tax increases the incentive to acquire also increases but not indefinitely. There is a certain level of emission tax beyond which any increase in emission tax decreases the incentive to acquire.*



PoC: Matt Insall, Associate Professor of Mathematics, *Department of Mathematics and Statistics*, President of Graduate Faculty. insall@mst.edu
573-341-4901; 573-340-8341

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Keywords

- Mathematical Logic, Universal Algebra, Topology, Hyperspaces, Applications of Metrics to Image Processing and Data Analysis, Integral Metrics, Metric and Topological Methods in Chemistry, Medicine and Engineering, Education and Training

Recognitions

- President for 3 terms, S&T Graduate Faculty

Collaborative Interests

- Image Classification, Thermochemical Effects, Ethics and Philosophy, Formal Methods and Concept Analysis