

NSSEFF Program Review & Workshop

Fusion and Inference from Multiple and Massive Disparate Data Sets

Carey E. Priebe

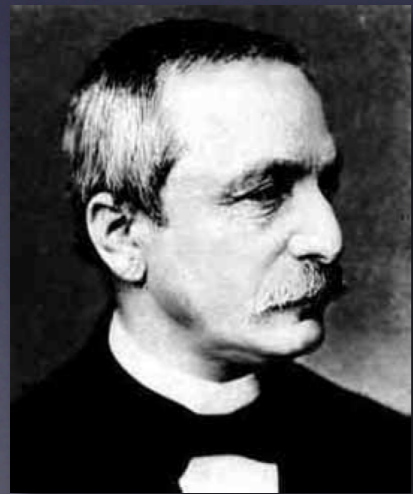
Department of Applied Mathematics & Statistics

Johns Hopkins University

June 13, 2013

Kronecker Quote

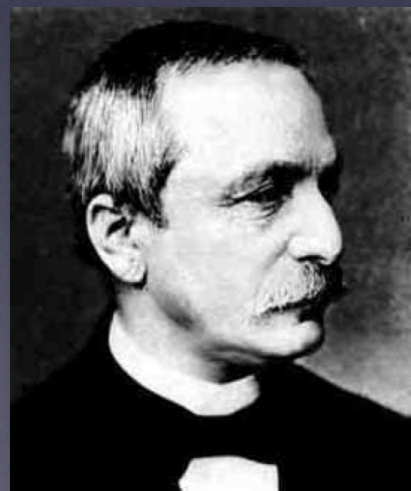
“The wealth of your practical experience with sane and interesting problems will give to mathematics a new direction and a new impetus.”



– *Leopold Kronecker to Hermann von Helmholtz* –



What is mathematics?

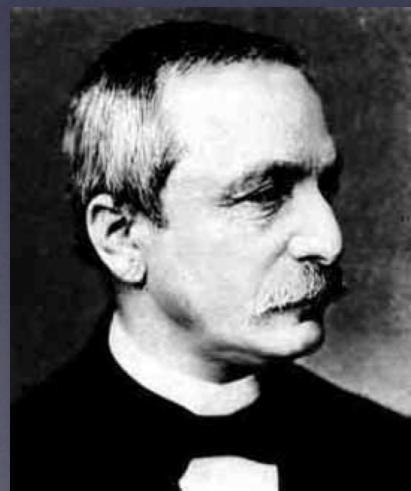
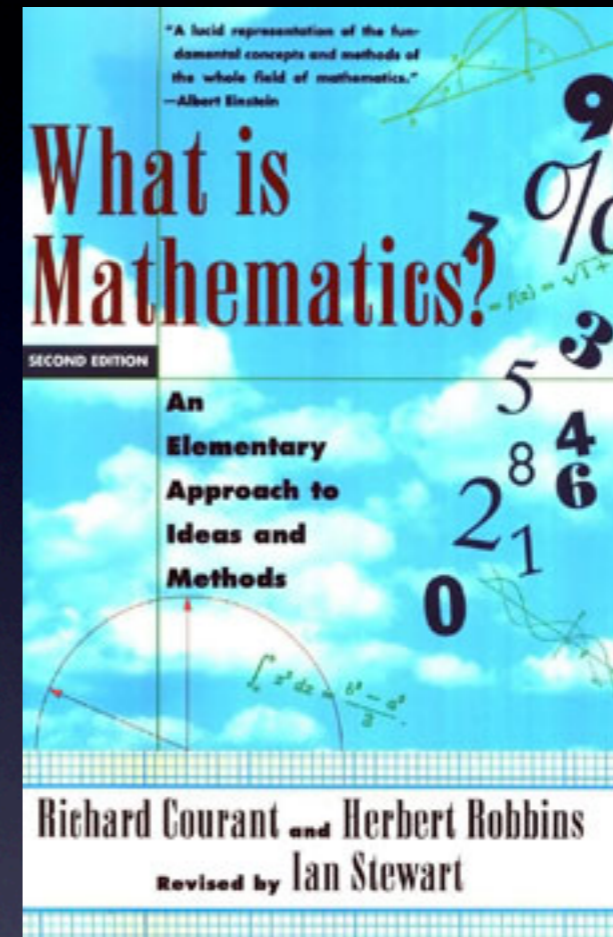


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What is mathematics?

With apologies to
Richard Courant
and
Herbert Robbins



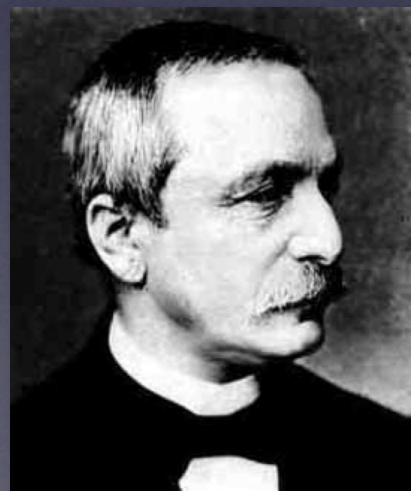
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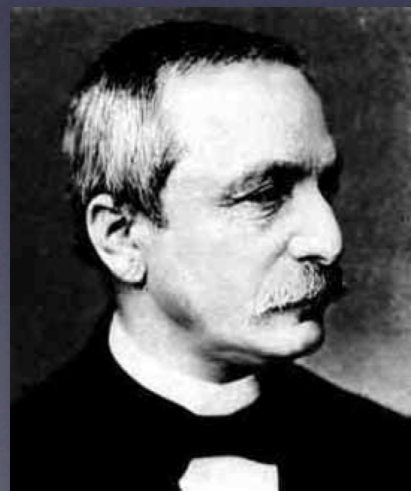
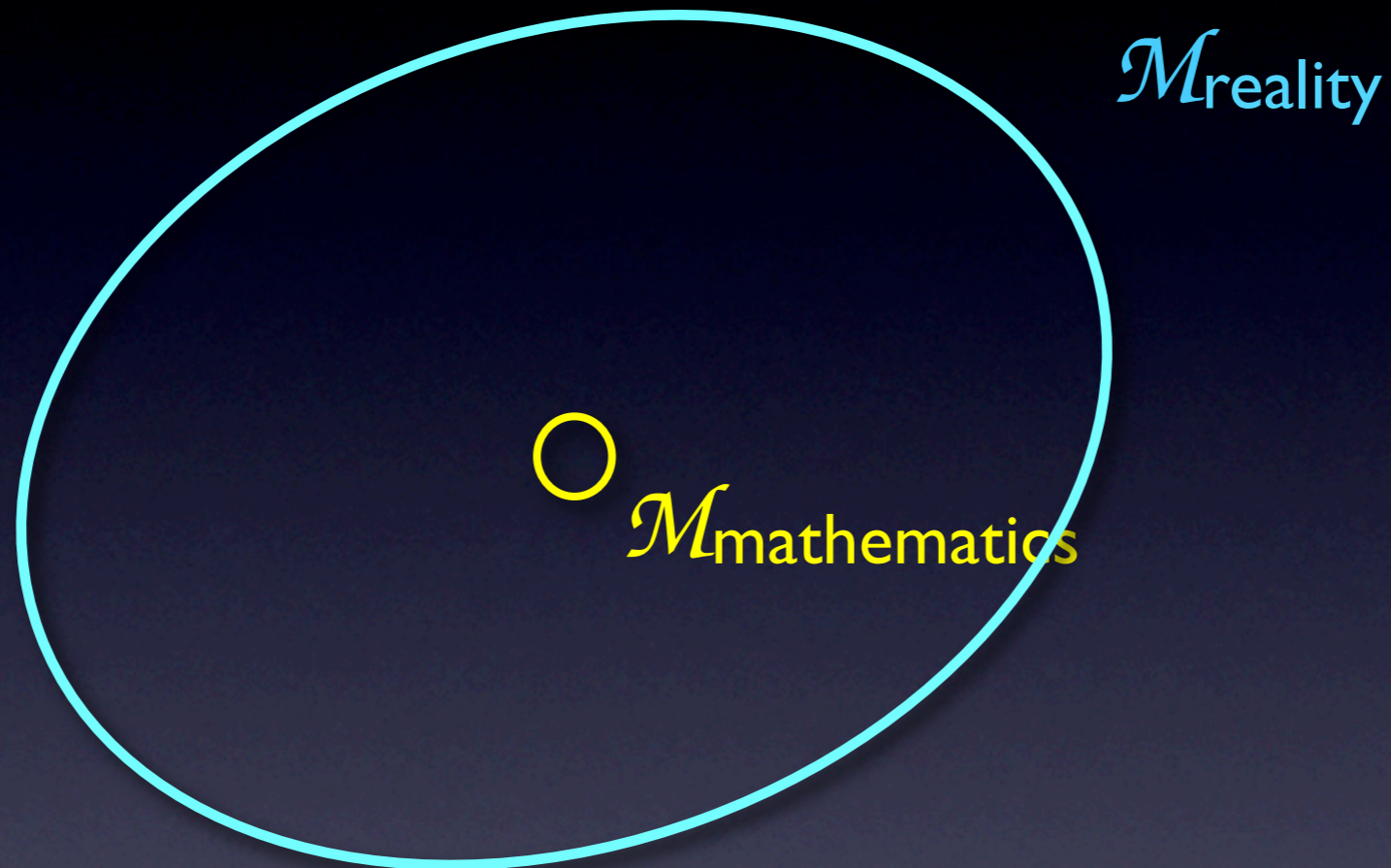
M_{reality}



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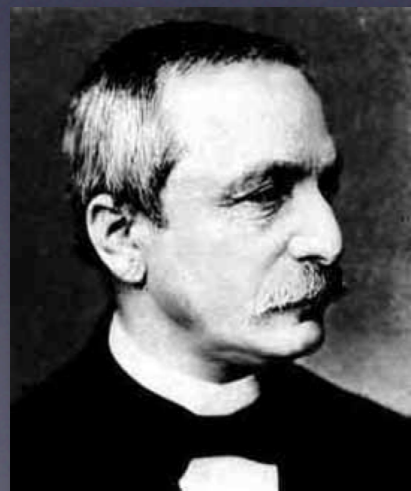
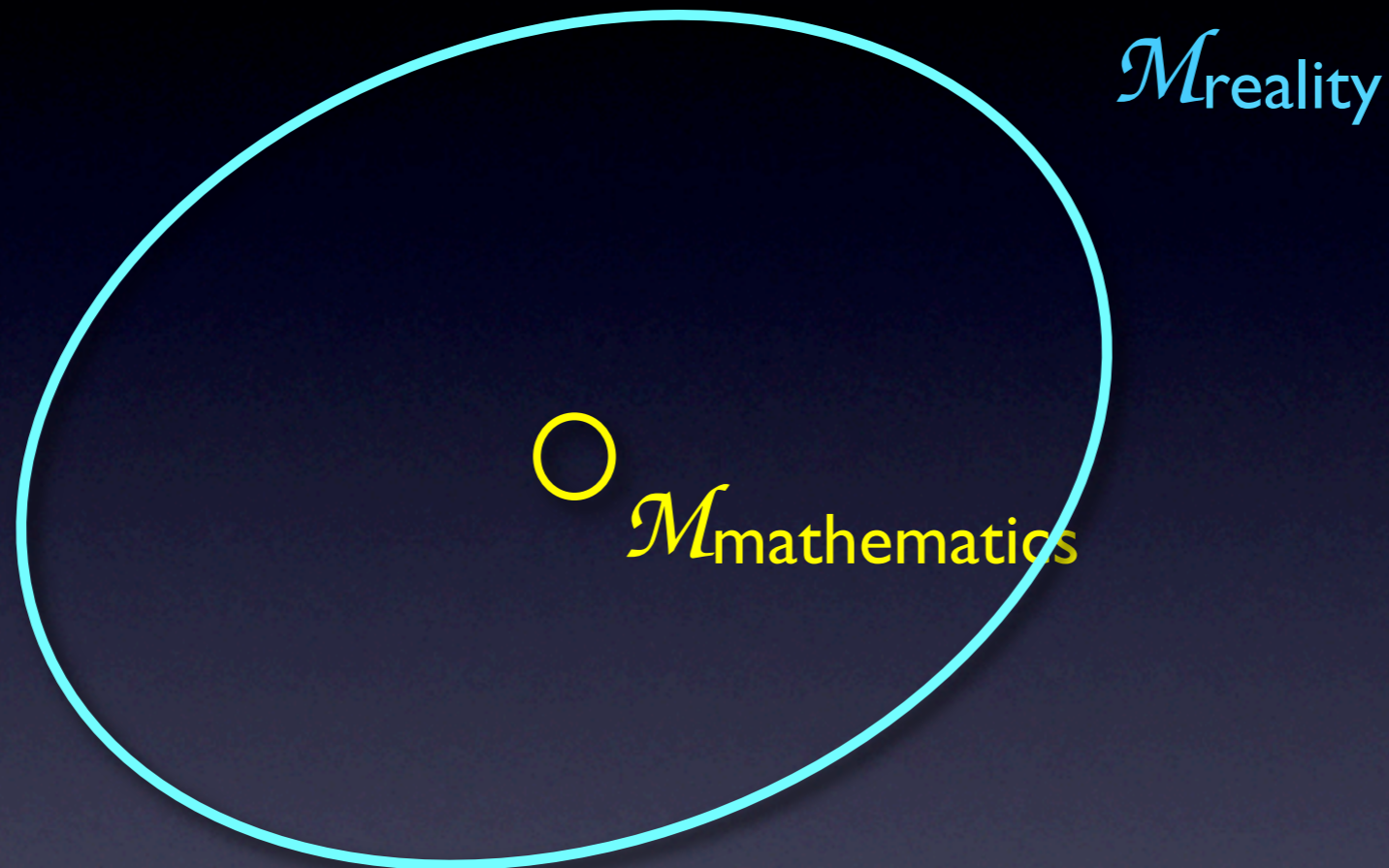
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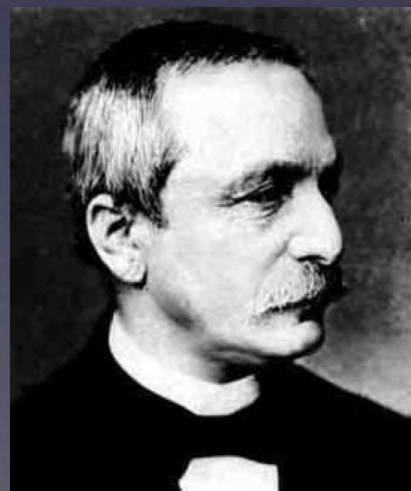
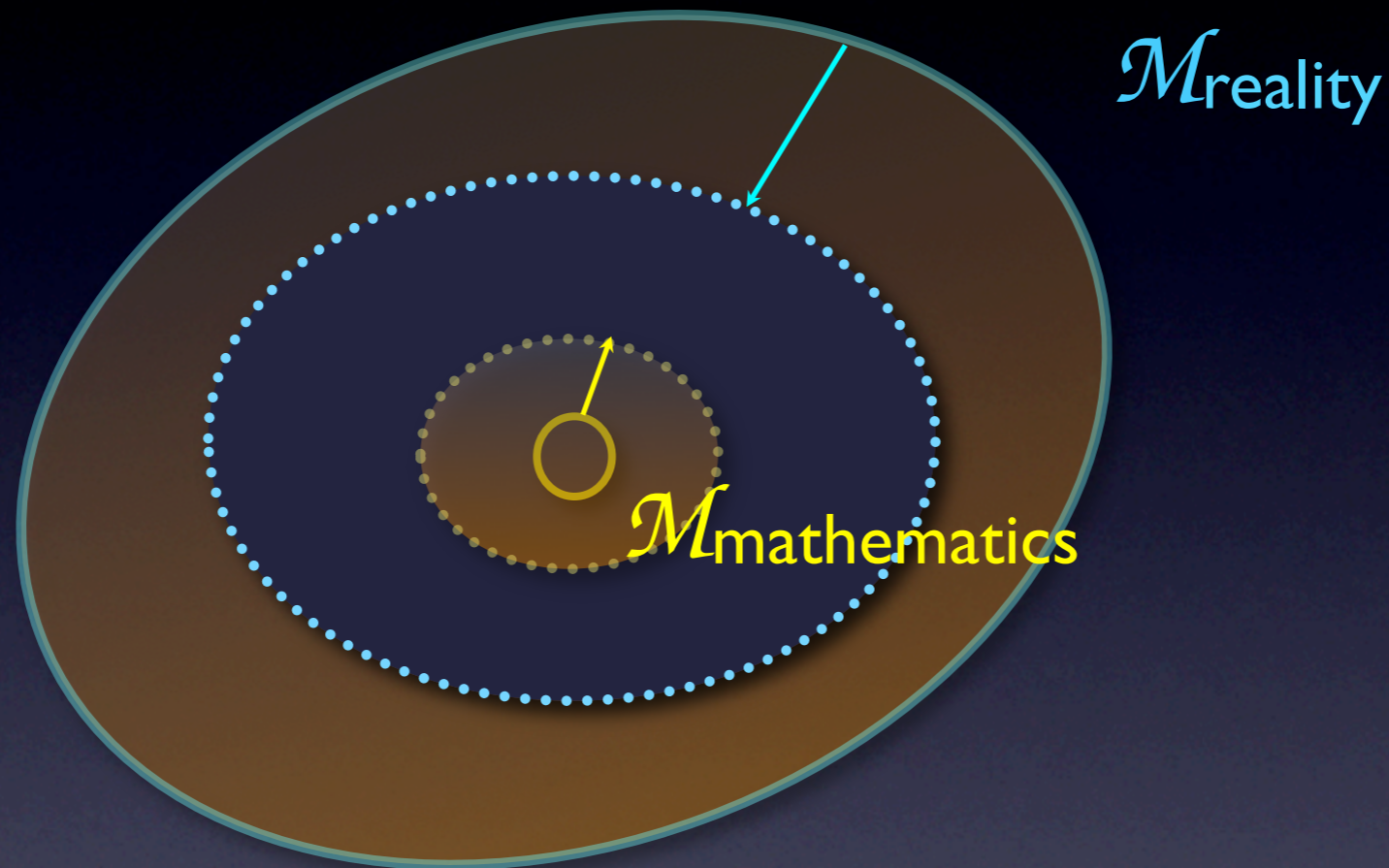
Applied What is mathematics?



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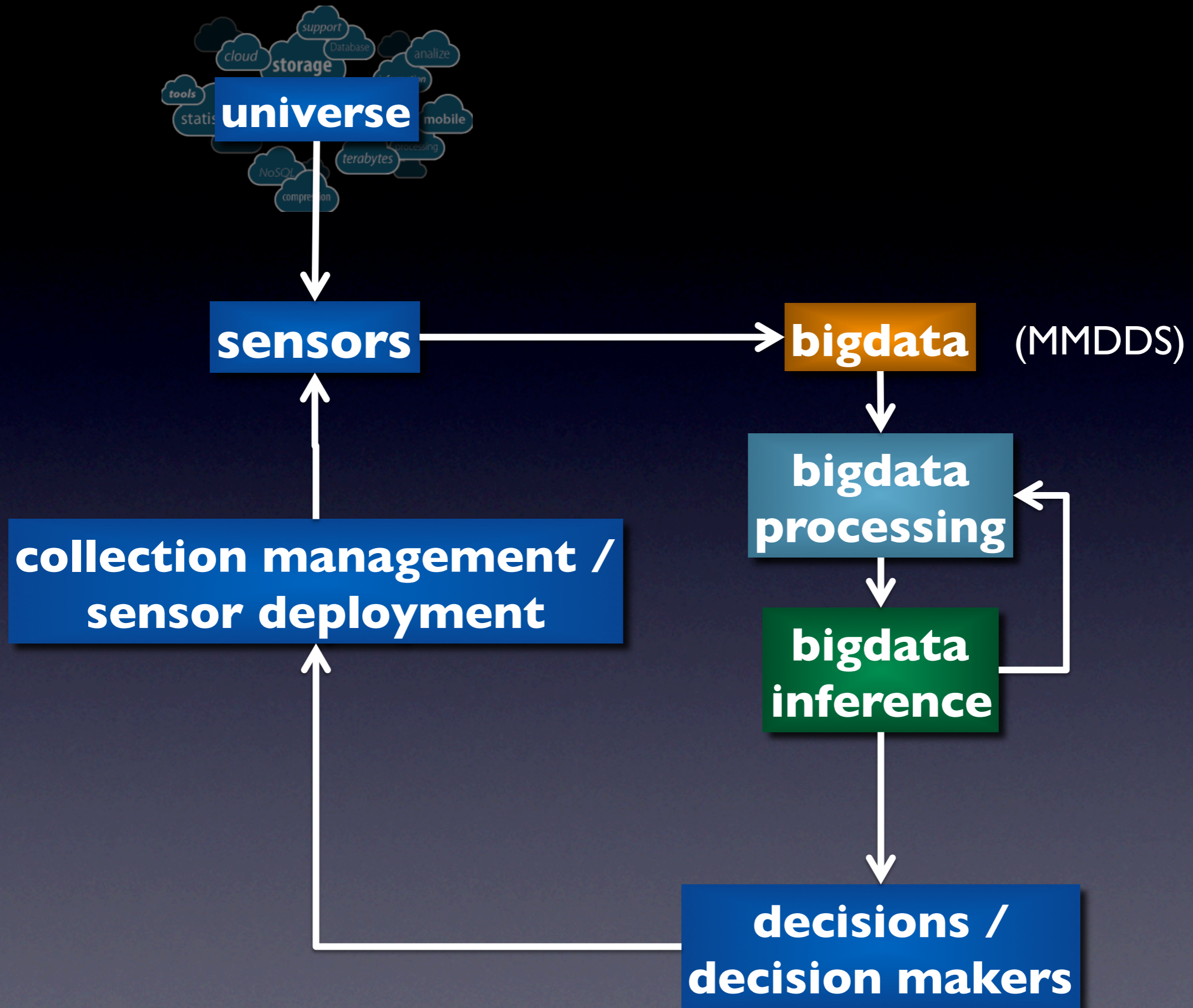


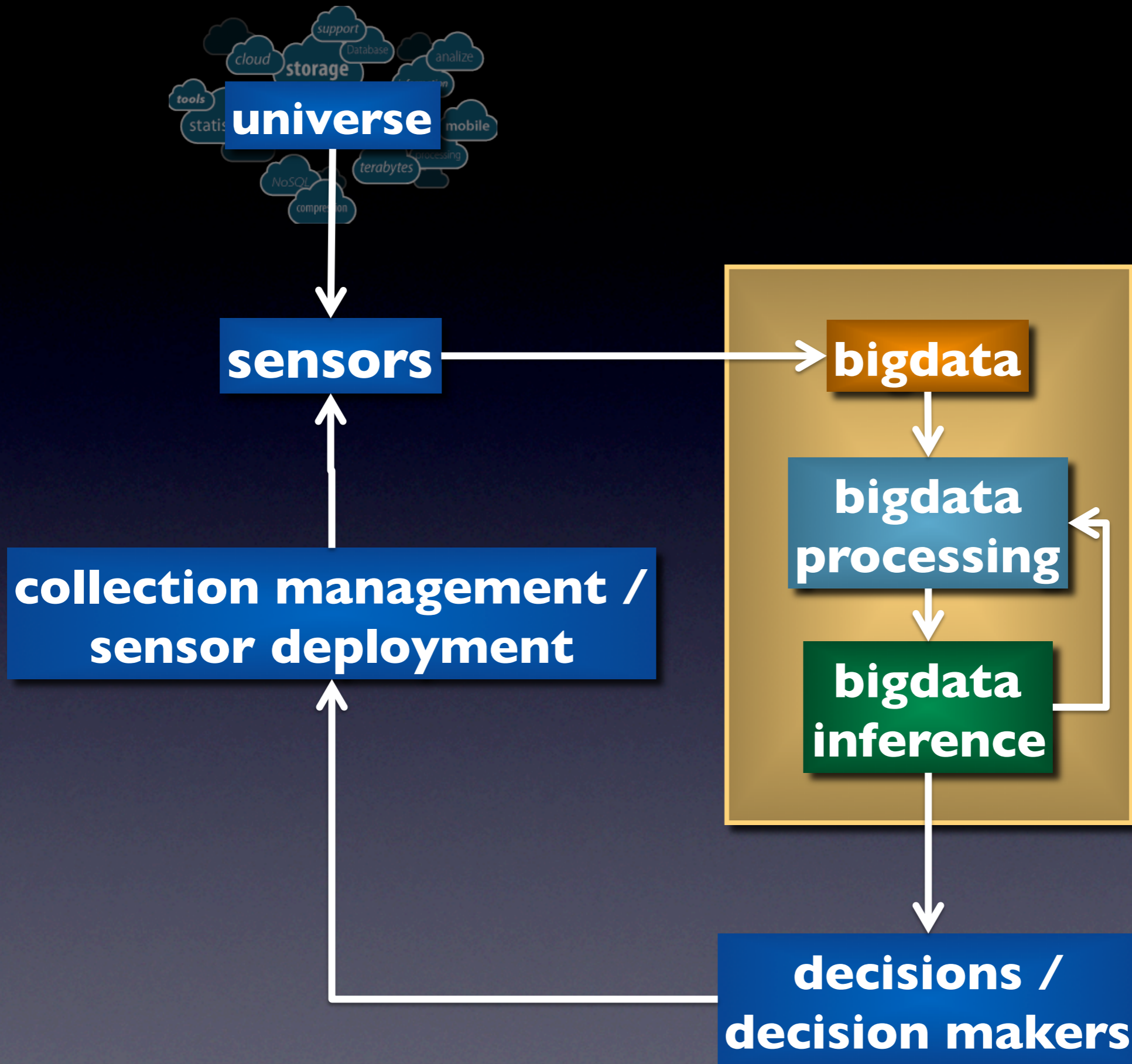
Applied What is mathematics?

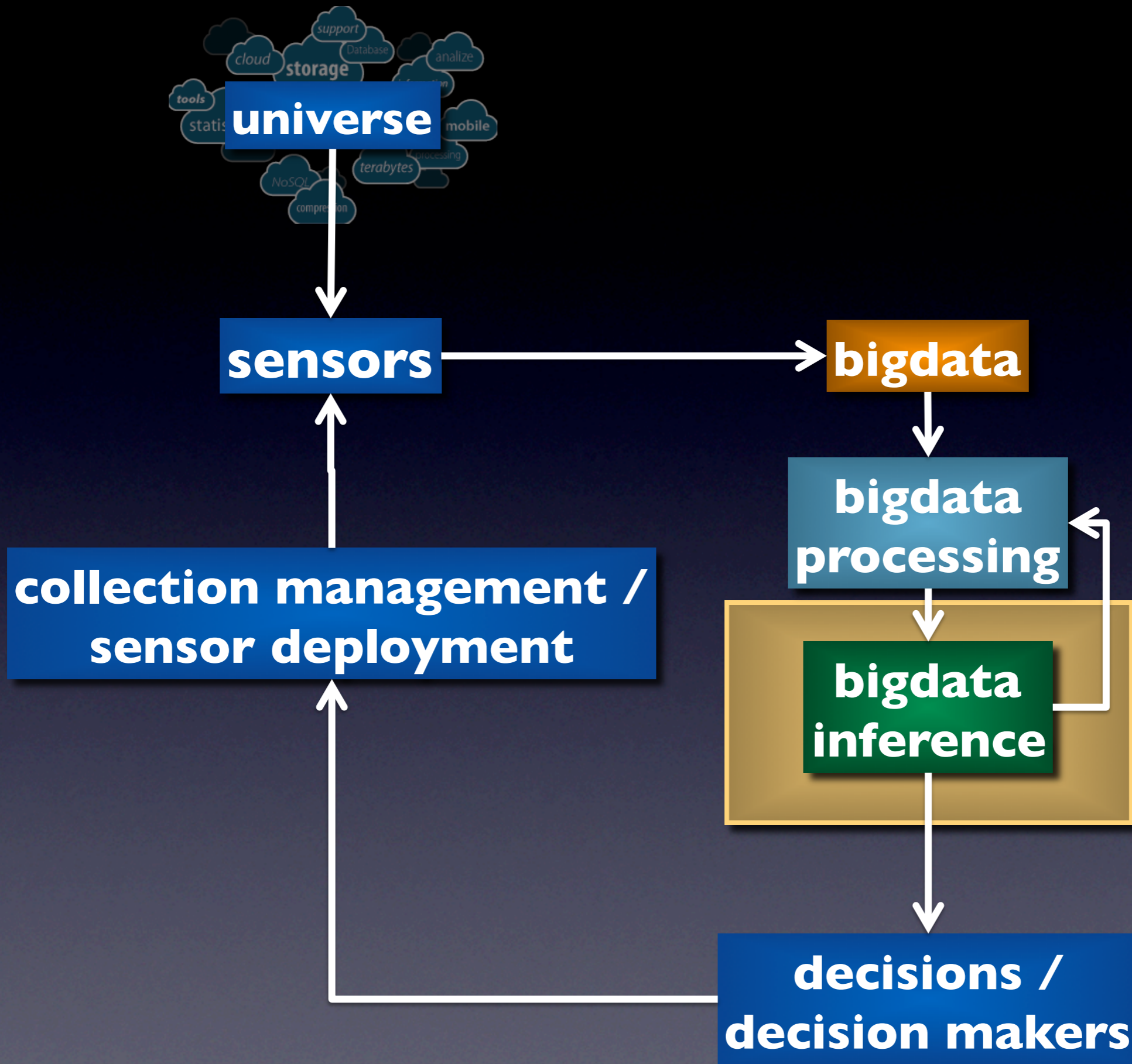


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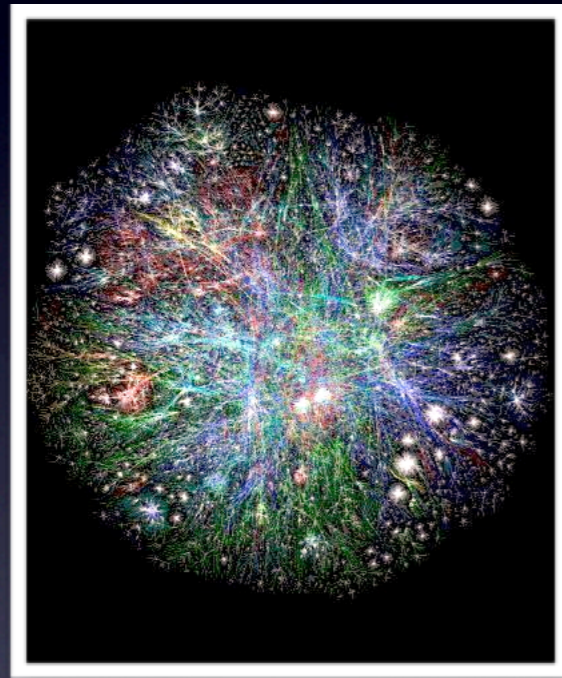




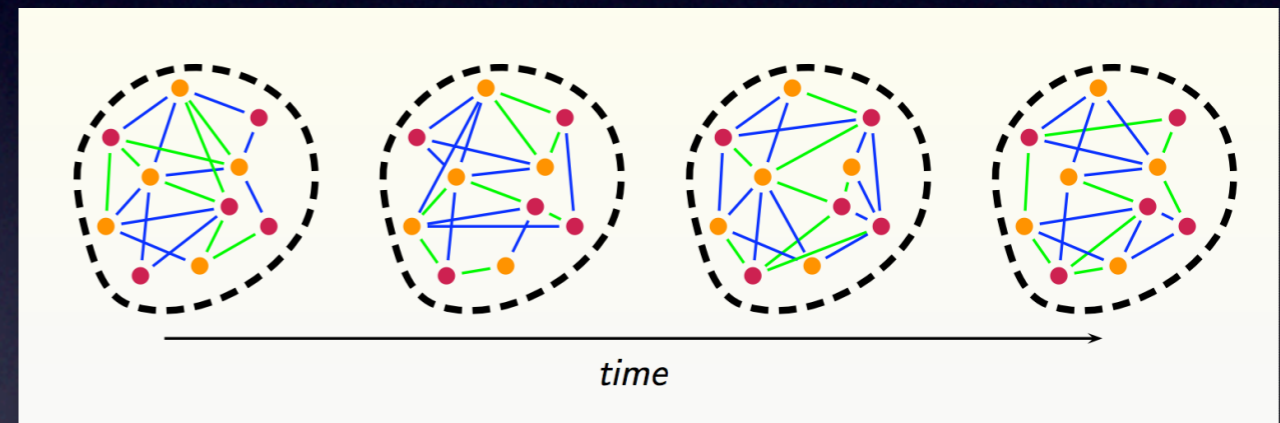


Fusion and Inference from Multiple and Massive Disparate Data Sets

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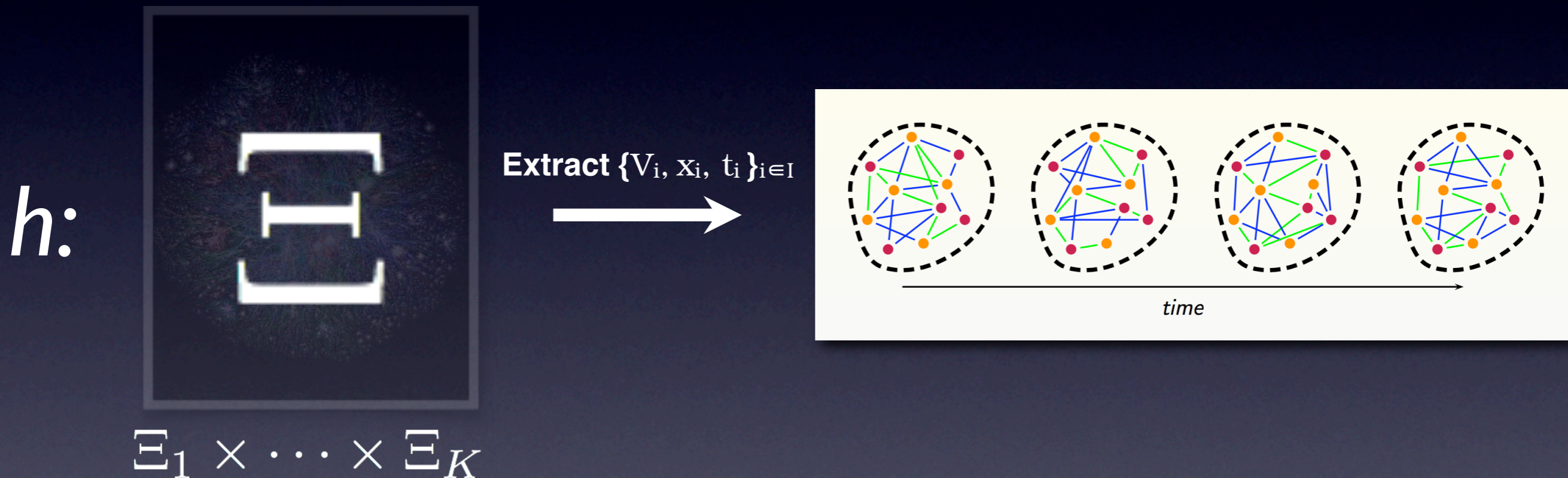


Extract $\{V_i, X_i, t_i\}_{i \in I}$



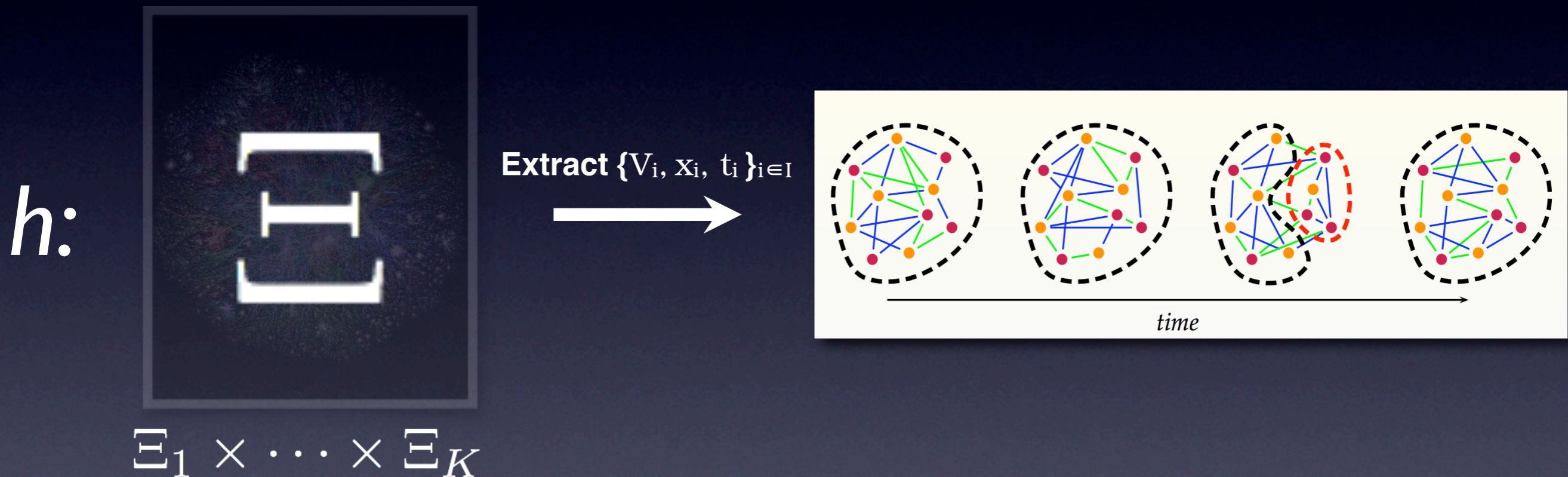
Generate Time Series of Attributed Graphs

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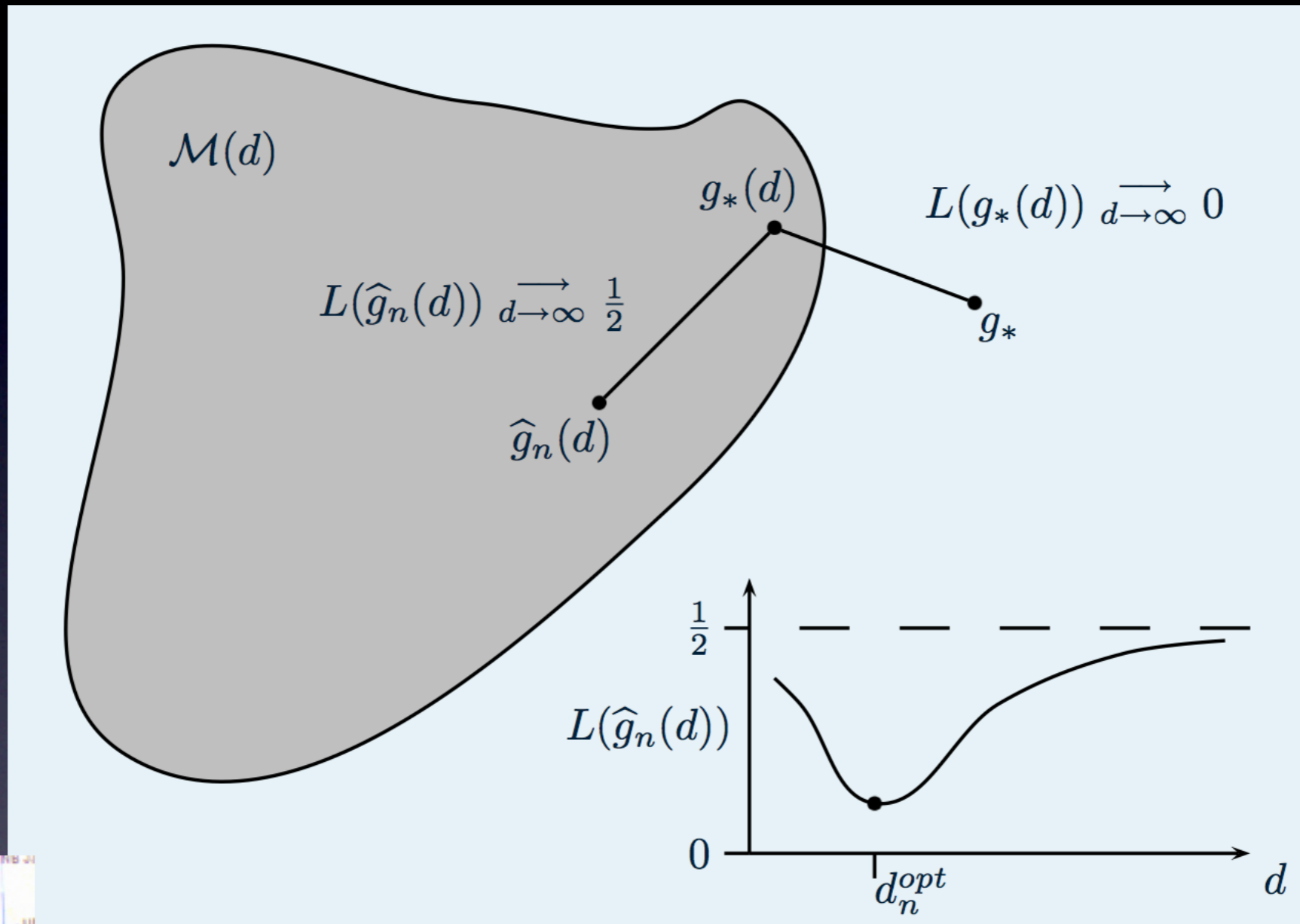
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**Anomaly Detection in
Time Series of Attributed Graphs**

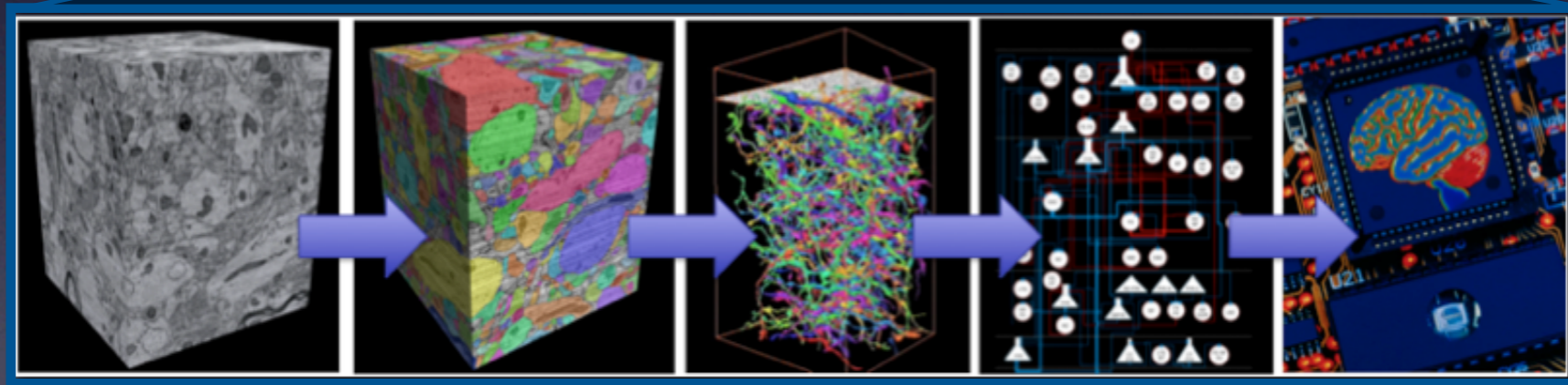
The Curse of Dimensionality



Dennis M. Healy

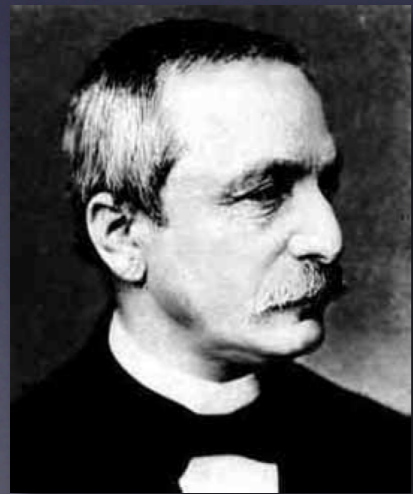


Connectome Example



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