

Statistical decisions based directly on the likelihood function

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my research

- ▶ PhD with Frank Hampel at ETH Zurich (November 2002 – March 2007):

Statistical Decisions Based Directly on the Likelihood Function

<http://e-collection.ethz.ch>

- ▶ PhD with Frank Hampel at ETH Zurich (November 2002 – March 2007):

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- ▶ Postdoc with Thomas Augustin at LMU Munich (SNSF Research Fellowship, October 2007 – September 2008):

Decision making on the basis of a probabilistic-possibilistic hierarchical description of uncertain knowledge

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- ▶ The resulting methods share the advantages of the likelihood-based inference methods: they are intuitive, generally applicable, conditional, dependent only on sufficient statistics, equivariant, parametrization invariant, asymptotically optimal (consistent) and efficient, and usually good from the repeated sampling point of view.

analogies

PRE-DATA
(random variable X)

POST-DATA
($X = x$ observed)

BAYESIAN
(prior π on \mathcal{P})

$$E_{\pi}[E_P[L(P, \delta(X))]]$$

\leftrightarrow
(temporal
coherence)

$$E_{\pi}[\text{lik}(P) L(P, d)]$$

NON-BAYESIAN
(prior ignorance)

$$\sup_{P \in \mathcal{P}} E_P[L(P, \delta(X))]$$

\leftrightarrow

$$\sup_{P \in \mathcal{P}} \text{lik}(P) L(P, d)$$

(minimax risk)

(MPL)