

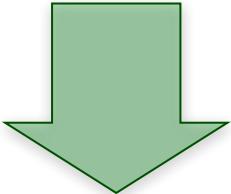
► **RC-measure:**

- **Relevance:** every approximate answer in S is η -close to an exact answer in $Q(D)$
- **Coverage:** every exact answer in $Q(D)$ is η -close to an approximate answer in S



How does it work?

Store “models” (access constraints + data oracles) instead of datasets



Store “approximate models” (access templates + data oracles)

bounded evaluation

A yellow speech bubble with a black outline, containing the text 'bounded evaluation'. The bubble has a rectangular body with rounded corners and a triangular tail pointing downwards and to the right.

bounded approximation

A yellow speech bubble with a black outline, containing the text 'bounded approximation'. The bubble has a rectangular body with rounded corners and a triangular tail pointing downwards and to the right.

- access templates: $\varphi = R(X \rightarrow Y, 2^k, \text{acc}(k))$
- data oracles: $\text{fetch}(\bar{x}, k, \varphi)$ returns 2^k Y -values with accuracy $\text{acc}(k)$

fetch *part of the* Y-values
with *accuracy guarantee*

$$\text{acc}(S, Q(D)) \leq \eta$$

The **first (only)** accuracy measure for

- ▶ *resource-bounded APQ / sub-linear plans*
- ▶ *generic queries (e.g., set-valued answers)*

for *generic* queries

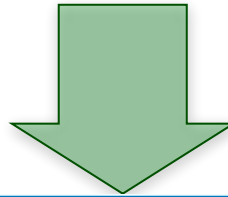
Features: (1) accessing $\leq \alpha|D|$ tuples; (2) deterministic accuracy bound

bounded evaluation

How does it work?

Store “*models*” (access constraints + data oracles) *instead of datasets*

bounded approximation



Store “*approximate models*” (access templates + data oracles)

- ▶ access templates: $\varphi = R(X \rightarrow Y, 2^k, \text{acc}(k))$
- ▶ data oracles: $\text{fetch}(\bar{x}, k, \varphi)$ returns 2^k Y -values with accuracy $\text{acc}(k)$

fetch *part* of the Y -values
with accuracy guarantee

▶ **RC-measure:** $\text{acc}(S, Q(D)) \leq \eta$

- **Relevance:** every approximate answer in S is η -close to an exact answer in $Q(D)$
- **Coverage:** every exact answer in $Q(D)$ is η -close to an approximate answer in S

The **first (only)** accuracy measure for
▶ resource-bounded APQ / sub-linear plans
▶ generic queries (e.g., set-valued answers)

for generic queries

Features: (1) accessing $\leq \alpha|D|$ tuples; (2) deterministic accuracy bound

BEAS (Bounded EvAluation of Sql)

— Bounded Evaluation + Bounded Approximation