A Scalable Database for Sensor Observations

Peter K. Kaiser, John N. Doe, <u>Jutta Kaisaniemi</u>

May 9, 2017

Introduction

- Of interest is CumulusRDF [1]
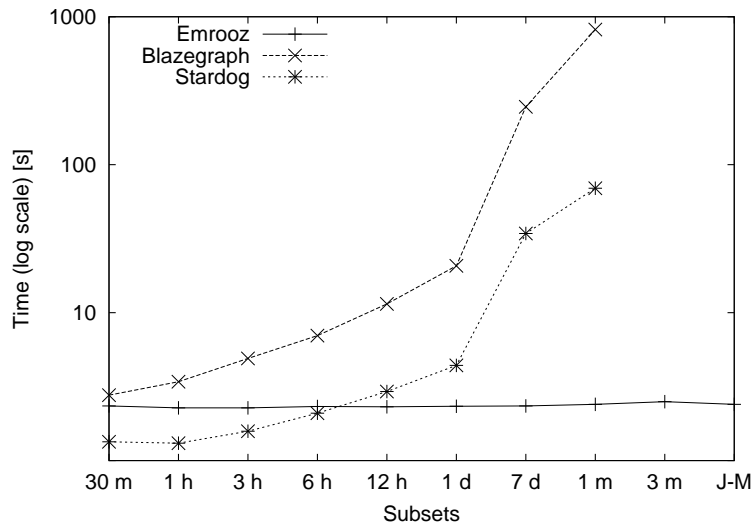- Widely adopted in the literature [2, 3]

Introduction

- Measure CO_2, CH_4, and H_2O fluxes
- Sampling frequency 10 Hz for 30 min

Results

Subset	Observations	Triples	Distinct
30 m	54 000	810 000	648 007
1 h	108 000	1 620 000	1 296 007

Results

References

[1] Günter Ladwig and Andreas Harth.
CumulusRDF: Linked Data Management on Nested Key-Value Stores.
In Achille Fokuoe, Thorsten Liebig, and Yuanbo Guo, editors, *Proceedings of the 7th International Workshop on Scalable Semantic Web Knowledge Base Systems (SSWS 2011)*, pages 30–42, Bonn, Germany, October 2011.

[2] Danh Le-Phuoc, Hoan Nguyen Mau Quoc, Josiane Xavier Parreira, and Manfred Hauswirth.
The Linked Sensor Middleware—Connecting the real world and the Semantic Web.
In *Proceedings of the Semantic Web Challenge at the 10th International Semantic Web Conference*, Bonn, Germany, October 2011.

[3] Laurent Lefort, Josh Bobruk, Armin Haller, Kerry Taylor, and Andrew Woolf.
A Linked Sensor Data Cube for a 100 Year Homogenised Daily Temperature Dataset.
In Cory Henson, Kerry Taylor, and Oscar Corcho, editors, *Proceedings of the 5th International Workshop on Semantic Sensor Networks*, volume 904, pages 1–16, Boston, Massachusetts, November 2012. CEUR-WS.