



The change point detection is a critical problem in time series analysis. Detecting these higher performance for the change points detection.

- **Context and Motivation**
- An increasing number of connected objects are also equipped with a GPS device.
- Polluscope is a typical use case study based on MCS.
- crowd.
- automatically from the collected raw data (i.e. activities and events).

□ Main Contribution:

MCS.

- □ Data acquisition is based on a sensor kit and a mobile device.
- Carbon, Temperature, and Humidity.
- □ Mobile Apps are used to collect GPS logs and to allow the participants annotate their context.



 \Box Problem : Not all the participants thoroughly annotate the change of their context $oldsymbol{\Im}$

 \Box \bigcirc Ambient air observations strongly depend on the context.

Objective:	segment	the	geo-data	series	into	non	overlappi	ng se	egments	acc
participants	activities by	y chan	ge detection	1.	Home	Car	Office Rus	Market		Home

dimensions may cause or contribute evenly in discovering the change in the participant's context.

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Change Point Detection over Multi-Variate Time Series - Application to Activity Transition Mining in the Context of Environmental Crowdsensing

Hafsa El Hafyani, Karine Zeitouni, Yehia Taher and Mohammad Abboud DAVID Lab, University of Versailles

Université Paris-Saclay

{hafsa.el-hafyani, karine.zeitouni, yehia.taher, mohammad.abboud}@uvsq.fr

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UNIVERSITE PARIS-SACLAY

•	Dimension	Threshold	Drift	Precision	Recall
	Temperature	0.6	0.05	0.72	0.78
	Humidity	4	0.05	0.70	0.82
	PM 2.5	25	0.03	0.87	0.30
	NO2	15	15	0.66	0.26
	Black Carbon	900	500	0.22	0.65
	Speed	1	0.1	0.12	0.52
	Post-processing	-	-	0.45	1