Table 1. Summary of datasets.

Dataset	Real/Synthetic	Samples	Dimensions	Classes	Noises	T
DS1	S	800	2	4	N	100
Banana	S	4811	2	2	N	800
RBF3	S	40000	2	7	Y	1000
DS_H	S	4000	3	2	N	500
Benchmark	S	10000	2	3	N	500
PowerSupply	R	29928	2	24	N	700
NOAA	R	18159	8	2	N	500
gasSensor	R	13910	128	6	N	700
ElectricDevices	R	7711	96	7	N	400
StarLightCurves	R	8236	1024	3	N	400
Wafer	R	6164	152	2	N	400

Table 2. Baseline algorithms and parameters setting

Algorithms	Parameters
ChronoClust	$\lambda = 0.5, eps = 0.2, \delta = 0.001, \beta = 0.5$ $minpts = 10, \pi = 10$
CEDAS	$decay = 1000, eps = 0.05, minpts = 15$
MuDi-Stream	$\alpha = 0.5, \lambda = 0.5, d = 2, gridGranularity = 32$
D-Stream	$\lambda = 0.998, len \in [0.05, 2]$ $C_1 = 0.8, C_m = 3.0, \beta = 0.3$
Den-Stream	$\lambda = 0.2, eps = 0.44, \beta = 0.2, \mu = 14.68$
TSF-DBSCAN	$\varepsilon_{min} = [0.05, 0.4], \varepsilon_{max} = [\varepsilon_{min}, 10\varepsilon_{min}]$ $min\_weight = [3, 10], \alpha = [0, 0007, 0.0017]$
d-FuzzyStream	$min\_fmics = 5, max\_fmics = 100$ k = actual number of clusters in dataset

Table 3. Parameters setting of GB-FuzzyStream

Parameters	descriptions of parameter
$\lambda \in [0.3, 1.5]$	decay factor
$m = 2$	fuzziness factor
$wav\_threshold \in [0.1, 0.8]$	threshold of WAV
$T_{offline} = 1$	period of offline clustering
$cofet \in [0.2, 0.7]$	coefficient for computing the threshold of δ and ρ example: δ_threshold = (np.min(δ) + np.max(δ)) * $cofet$ δ represents relative distance,ρ represents local density in DPC algorithm