Table S1. The used HDFS commands

ID	Operation	Command
1	Creation of the HDFS folder	hadoop fs –mkdir /user/root/SATDATA
2	Enlist the HDFS files in folder	hdfs dfs -ls /user/root/SATDATA
3	Copy CSV file into HDFS	hadoop fs -put CH4.csv /user/root/SATDATA
4	HDFS file visualization	hadoop fs –cat /user/root/SATDATA/CH4.csv

Table S2. The used HBase commands

ID	Operation	Command
5	Start the HBase shell	Hbase shell
6	Create an HBase table	CREATE 'Table_CH4','DT','GL','LV';
7	Display all the tables	List
8	Import an HDFS inside HBase table (Example of CH4 file)	hbase org.apache.hadoop.hbase.mapreduce.ImportTsv -DIMPORTTSV.SEPARATOR=';'-DIMPORTTSV.CO UMNS="HBASE_ROW_KEY, DT:EpochTime, DT:Y, DT:M, DT:D, DT:H, DT:Min, GL:Latitude, GL: Longitude, LV: LevelGround, LV: Level0, LV: Level1, LV: Level2, LV: Level3, LV: Level4, LV: Level5, LV: Level6, LV: Level7, LV: Level8, LV: Level9, LV: Level10, LV: Level11, LV: Level12, LV:Total_column" Table2_CH4 hdfs://192.168.11.200:/user/root/SATDATA/CH4.csv
9	Disable a table	disable 'Table_CH4'
10	Remove a table	drop 'Table_CH4'
11	Show the HBase table	scan 'Table_CH4'
12	Get the first column	get 'Table_CH4', 'Row1'

Table S3. The used Hive commands

ID	Operation	Command
13	Creation of the database1	CREATE DATABASE IF NOT EXISTS database1 LOCATION '/user/root' WITH DBPROPERTIES ('CREATEDBY'=semlali, 'CREATEDFOR'= database1');
14	View details of the database1	DESCRIBE DATABASE EXTENDED database1;
15	Enlist the databases	SHOW databases;
16	Enlist the tables	SHOW tables;
17	Import an HBase table inside Hive (Example of CH4 files)	CREATE EXTERNAL TABLE table_ch4_hive (key STRING, epochtime STRING, y BIGINT, m BIGINT, d BIGINT, h BIGINT, min BIGINT, latitude FLOAT, longitude FLOAT, levelground FLOAT, level0 FLOAT, level1 FLOAT, level2 FLOAT, level3 FLOAT, level4 FLOAT, level5 FLOAT, level6 FLOAT, level7 FLOAT, level8 FLOAT, level9 FLOAT, level10 FLOAT, level11 FLOAT, level12 FLOAT, total_column FLOAT) STORED BY 'org.apache.hadoop.hive.hbase.hbasestoragehandler' WITH SERDEPROPERTIES ("hbase.columns.mapping" =":key, epochtime, y, m, d, h, min, latitude, longitude, levelground, level0, level1, level2, level3, level4, level5, level6, level7, level8, level9, level10, level11, level12, total_column") TBLPROPERTIES ("hbase.table.name" = "table_ch4", "hbase.mapred.output.outputtable"="table_ch4");
18	Import an HDFS file inside Hive (Example of CH4 file)	CREATE EXTERNAL TABLE Table_CH4_HDFS Key STRING, EpochTime BIGINT, Y BIGINT, M BIGINT, D BIGINT, H BIGINT, Min BIGINT, Latitude FLOAT, Longitude FLOAT, LevelGround FLOAT, Level0 FLOAT, Level1 FLOAT, Level2 FLOAT, Level3 FLOAT, Level4 FLOAT, Level5 FLOAT, Level6 FLOAT, Level7 FLOAT, Level8 FLOAT, Level9 FLOAT, Level10 FLOAT, Level11 FLOAT,

		Level12 FLOAT, Total_column FLOAT) ROW FORMAT DELIMITED FIELDS TERMINATED BY ';' STORED AS TEXTFILE LOCATION '/user/root/SATDATA';
19	Select top 10 rows of the Hive table sorted by epoch time	SELECT * FROM table_ch4_hive SORT BY epochtime DESC LIMIT 10