

**Reply to Anonymous Referee #1:**

**Supplement Material.**

**Table I.** Comparison of the 4 circulation types obtained from Cluster Analysis and Principal Component Analysis.

Circulation Type	Cluster Analysis k-means			Principal Component Analysis		
	Cluster	% days	Seasonal Trend	PC	% days	Seasonal Trend
1	1	24%	Summer	4	22%	Summer
2	2	31%	Spring	1	35%	Spring
3	3	12%	Spring	3	9%	Spring
4	4	33%	Summer	2	35%	Summer

% days: number of episodic days assigned to each cluster or principal component.

Seasonal Trend: Season with the higher frequency of occurrence of the circulation type during the 2001-2011 period.