**Supplementary File 5: Studying the role of various air masses on the stable isotopes content of precipitation using stepwise technique:**

Studying the role of various air masses on the stable isotopes content in precipitation show no clear correlation. However, *d*-excess values show clear correlation with the variations of cP and MedT air masses mixture “cP+MedT” in precipitation.

| **Model Summary b** | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
| R Square Change | F Change | df1 | df2 | Sig. F Change |
| dimension0 | 1 | .560a | .314 | .268 | 5.31703 | .314 | 6.860 | 1 | 15 | .019 | 1.278 |
| a. Predictors: (Constant), MedT+cP | | | | | | | | | | | |
| b. Dependent Variable: *d*-excess | | | | | | | | | | | |

| **Coefficients a** | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95,0% Confidence Interval for B | |
| B | Std. Error | Beta | Lower Bound | Upper Bound |
| 1 | (Constant) | 17.930 | 1.676 |  | 10.699 | .000 | 14.358 | 21.502 |
| “MedT+cP” | -.704 | .269 | -.560 | -2.619 | .019 | -1.278 | -.131 |
| a. Dependent Variable: *d*-excess | | | | | | | | |

The final model for *d*-excess is as bellow:

*d*-excess= -0.704 (“MedT+cP” contribution rate in participation) + 17.930