On the use of the factor separation methodology- lessons from recent 20 years for climate studies

Pinhas Alpert

Tel-Aviv University, Tel-Aviv University, Geophysical, Atmospheric & Planetary Sciences, Tel-Aviv, Israel
(pinhas@post.tau.ac.il, +972 3 640 9282)

Since our pioneering publication of the Factor Separation Methodology (Stein and Alpert, 1993) many different applications were applied as summarized by Alpert and Sholokhman (2011). Here, I wish to present several applications for climate studies with focus on the central role of synergies or interactions among different factors as revealed by this methodology. Evidence for the importance of climate synergies from the leaf cell up to global scale will be presented (Alpert et al. 2006).

Also, similarities with other disciplines like medicine in which synergies play a major role. For instance, interactions among different medications and how they are beng treated in medicine.

References:
P. Alpert and T. Sholokhman, "Factor Separation in the Atmosphere, Applications and Future Prospects", P. Alpert and T. Sholokhman (Eds.), Cambridge University Press, 274pp,2011. http://www.cambridge.org/catalogue/catalogue.asp?isbn=9780521191739
U. Stein and P. Alpert, "Factor separation in numerical simulations", J. Atmos.Sci., 50, 2107-2115, 1993.
P. Alpert, D. Niyogi, R.A. Pielke,Sr., J. L. Eastman, Y.K. Xue, and S. Raman, "Evidence for carbon dioxide and moisture interactions from the leaf cell up to global scales: Perspective on human-caused climate change", Global Planetary Change (LCLUC Special Issue), 54, 202-208, 2006.