An analytic literature review using the framework of dependent and independent variables shows that the Sun is a key regulator of the Earth's climate is being corroborated increasingly.

The set of independent variables is the Sun's: output of radiation and matter, electromagnetic and gravitational fields, and shape; and the topologic structure of the heliosphere. The set of dependent variables consists of the Earth's: atmospheric systems; ocean systems; coupled atmospheric-oceanic systems; clouds; Rossby & Kelvin waves; rotation; atmospheric angular momentum; dynamo; electromagnetic field; and global electric circuit. The independent variables' time-lag effects range from hours to centuries; the dependent variables have timelags, too. The variables within each set are not functionally independent: complex interactions amplify or dampen total solar effects.

Four nonlinear, nonstationary processes relating the two sets of variables are identified: strange attractors; resonant amplification; phase synchronisation; and complexity matching. Other relevant factors include the: climate system's internal variability; Earth’s albedo; cosmic rays; Earth's orbital geometry, including Milankovitch processes; planets' gravitational effects on the Earth’s and Moon’s orbital geometry; and Sun’s epitrochoid-shaped barycentric motion.

This theoretical framework shows that the interaction effects of the two classes of variables have the greatest effect on climate dynamics. If the global climate system is a heat engine, total solar activity, and the relevant factors, are its sources of energy and regulation. The Sun-Earth system is electromagnetically, magneto-hydrodynamically and gravitationally coupled, dominated by significant nonlinear, nonstationary interactions, varying over time and throughout the Earth's 3-dimensional structure, its atmosphere and oceans.