Abstract Submitted
for the NEF19 Meeting of
The American Physical Society

Mirrors for Earth's Energy Rebalancing (*MEER:ReflEction*): Resource-driven engineering leveraging Earth's chemistries to immediately offer remediation[1] YE TAO, Harvard University — Anthropogenic aerosols (AA) and greenhouse gases (GHG) co-emit into the atmosphere as peoples exercise unalienable rights in pursuit of well-being and prosperity. Airborne, AA cool the Earth almost as much as GHG warm it. This balancing act has masked an additional 1C of warming, should the AA disappear along with fossil fuel burning without compensatory solar radiation management. In this scenario, knowledge of ecology would project the annihilation of already shifting and collapsing ecosystems. The inconvenient truth of cooling by AA renders the sum of incremental adaptation measures insufficient, regardless of implementation scale and speed of implementation, for halting an ongoing extinction of complex life on this planet. Here, we step back, take a holistic view of the Earth, and design a geoengineering project compatible with the laws of physics, empirical evidence of ecosystem functioning, as well as constrains in material, energy, economics, and sociopolitics. *MEER:ReflEction* applies aluminum-coated glass mirror arrays for solar radiation management. We find it feasibly necessary to deploy the arrays on land and at sea within single-digit years to fully rebalance Earth's energy. The cost for full deployment is comparable to the projected increase in risk to global assets by 2030 in the event of inaction. Decisive co-benefits, including a concurrent global transition to 100% solar thermal energy, make *MEER:ReflEction* the only plan available to *homo sapiens* that optimizes its near-term survival and future prosperity as a people.

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Date submitted: 11 Sep 2019 Electronic form version 1.4