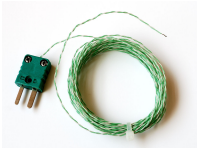
Experimental proof that radiative fluxes cannot be added.

Purpose: to test whether two or more sources of radiation (heat) aimed at the same target create a temperature based on adding the individual fluxes together (as in the GHE).

Equipment

Assemble
A double filament auto bulb (globe in Australia) and holder.
12V variable power supply
Two digital multi-meters (DMM) – one of which should be able to read temperature
Thermocouple (comes with DMM)
Clamps, stands etc.



Process:
Use clamp to bring the thermocouple near the bulb / globe surface
At a chosen voltage across the filament, activate one of the filaments and read the temperature at the thermocouple near the bulb surface
Activate the other filament and ditto
Activate both (but make sure the voltage across the filaments is the same in all three cases) and ditto.

Note on measurements and theory:

The flux at the thermocouple is proportional to fourth power of the temperature in Kelvin as measured by the thermocouple – so everything is measurable. (See next page for the theory.)

Actual experimental results and comparison with Flux-add predictions

Voltage	Top Filament Average ºC	Lower Filament Average ºC	Both at once Average ºC	Flux-add (GHE) Prediction
3.00	31.00	37.46	**37.36**	**92.00**
3.50	33.49	39.84	**40.70**	**95.00**
4.00	43.30	63.74	**65.84**	**116.00**

Notes on predictions and results:

The predictions shown are those calculated by adding fluxes together.
The theory (algebra and arithmetic) of the calculations is shown over page.
The alternative theory (Thermodynamics) prediction needs no calculation – it is just the highest of temperature reading reached by any of the sources – which in this setup is always the lower filament.

Conclusion:

Adding heat (radiation fluxes) does not give results anywhere near the predicted values.

On the other hand the Thermodynamics predictions are within experimental error; in this case the "*Lower Filament Average*" is always just about the same as the "*Both at once Average*".

Therefore: two or more sources of radiation (heat) aimed at the same target do not create a temperature based on adding the individual fluxes together.

Flux measurements cannot be added together or aggregated – the operation is meaningless.
Adding fluxes together contravenes the 2nd Law of Thermodynamics.
Either the 2nd Law is true or the Flux-add theory is true – they are mutually exclusive.

Flux-add theory to calculate temperature prediction

The following is the reasoning and algebra behind the the experiment.
Nothing here is invented, it is just adapted from the Greenhouse Gas Theory and applied in a setting where it can be tested. It has been seen by many people (many who fervently believe in the GHE theory) and no serious challenges have been received.
The Greenhouse Gas theory states that the Flux at the Earth's surface is the sum of the Flux at the Earth's surface from the Sun and the Flux at the Earth's surface from Greenhouse Gases.

This experiment reproduces that by stating that the Flux at the thermocouple with both filaments switched on is the sum of the Flux at the thermocouple with the upper filament switched on and the Flux at the thermocouple with the lower filament switched on.
In the experiment we can measure the temperatures at the thermocouple reasonably accurately, and we can work out the relationship with flux – and therefore test the idea that adding or aggregating Fluxes together is a valid operation or not.
We are testing whether this equation is true or not $F_B = F_U + F_L$ where

F_B is the flux at the thermocouple with both filaments on
F_U is the flux at the thermocouple with the upper filament only on
F_L is the flux at the thermocouple with the lower filament only on

The general relationship with Flux and Temperature in Kelvin is given by the Stefan–Boltzmann law:

$F \propto T^4$ as the conditions (constants / modifiers / geometry) are the same for all three cases,

$F_B = F_U + F_L$ becomes

$T_B^4 = T_U^4 + T_L^4$ where T_B is the thermocouple temperature for both filaments on
T_U is the thermocouple temperature for upper filament on only
T_L is the thermocouple temperature for lower filament on only

Using these calculations it can be seen that the Predictions of the GHE calculation of adding Fluxes are wrong.
The predictions from the older (non-Climatology) Thermodynamics theory is much more accurate – and with proper equipment would probably be spot on.

As can be seen from the results – the GHE fails. $T_B^4 \neq T_U^4 + T_L^4$

From Thermodynamics, the prediction is that $T_B^4 \equiv T_U^4$ or $T_B^4 \equiv T_L^4$ whichever is the greater.
(Note that in some "energy budget diagrams " from NASA, the Flux from GHGs is shown as greater than that from the Sun – so in that case the GHG is the dominant heat source and the Sun doesn't count!)
Of course there are many other methods of performing this experiment – and Lab Technicians will probably come up with some great ideas to minimise heat leakage from conduction and effects of convection.
Two or more sources of radiation aimed at the same target do not create a temperature which is the sum of their radiation (flux).
Therefore the GHE which relies on the two sources of Solar radiation and GHE radiation to be summed cannot be true.
The Earth's surface reaches the equilibrium temperature achieved by either Solar or GHE acting alone – they cannot be added together.

The Greenhouse Effect is false – it does not, and cannot exist .

Notes on the Experiment:

Choice of double filament bulb

The advantage of using a double-filament bulb in the way described is that both filaments illuminate the same area of the thermocouple and from roughly the same angle and distance – so we don't have the problem of calculating areas, angles and so on.

All the equipment is small enough to manage for a home experiment – but of course a university or industrial test could be much more accurate and span a greater range of temperatures.

Cross-heating of filaments

It has been pointed out that with both filaments on, the hot filament would raise the temperature of the cooler filament. That means that the GHE calculation above is on the low side; nevertheless the error is so far out it makes no difference in falsifying the GHE.

A better experiment would eliminate this by shielding the heat sources from one another.
From the Thermodynamics point of view the cross-heating makes no difference. The Flux absorbed at the thermocouple is determined by the strongest source – all others fade into the background and do not contribute.

The bulb in the experiment is not ideal as it is filled with argon gas and is not a vacuum as many assume. With both filaments on there would probably be more heat transferred to the glass through convection and conduction – which of course is independent of that delivered by radiant flux.

Note that the divergence of the "Lower filament" and "Both on at Once" seems to be greater when the temperature is higher.
A better experiment would place the thermocouple inside a vacuum enclosure with the two filaments / heaters.
Nevertheless, as can be seen, the results are convincing with even the most basic equipment.