In the March 2008 issue of PHYSICS TODAY, Nicola Scafetta and Bruce West show a graph (page 51) of global surface temperature and total solar irradiance. Two curves of TSI are shown. The red curve shows an increase of TSI since 1980 and is used to argue that global surface temperature is sensitive to TSI. The reference citation for the figure says that data for the red curve are from http://www.cru.uea.ac.uk and http://www.acrim.com.

Both links show that TSI has not increased since 1980, but instead decreased during that period, so Scafetta and West's red curve disagrees with the cited data sources. That error is serious because it leads to the inaccurate conclusion in the last sentence of the article, that the report from the Intergovernmental Panel on Climate Change should not be trusted.

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Rest assured that the Opinion piece on solar contributions to climate change will find its way hastily into the policy—or should I say political—community and will be misused to stall efforts to limit greenhouse gas emissions. And on what scientific grounds? The work by Nicola Scafetta and Bruce West ignores decades of fundamental physical research and is roundly criticized on technical grounds.[1,2] More important, their basic approach to the question of how the Sun influences climate defies sound scientific logic.

Despite their sophisticated statistical treatments, the authors commit a fallacy by ignoring an established physical forcing (greenhouse gases) while trying to assess the contribution of a separate forcing (solar irradiance); both push the climate in the same direction, if one assumes that the questionable ACRIM satellite time series on solar irradiance is accurate. With IR-trapping gases omitted, the analysis by Scafetta and West must overestimate the contribution of total solar irradiance variations to surface warming. Is the contribution overestimated slightly or dramatically? The authors' work offers no insights.

Even if Scafetta and West take issue with the statistical treatments done by the Intergovernmental Panel on Climate Change, they should nonetheless appreciate the indispensable requirement to account for all relevant forcings, as the IPCC does in its analyses. If they hope to make an authentic contribution to our understanding of the Sun's role in climate change, they must build on an existing body of knowledge; ignoring more than a century of physical science will not help.

The policy community relies on professional scientific publications to provide sound information on relevant topics. When PHYSICS TODAY publishes opinions that are physically unsound and defy basic scientific logic, the policy community is misled. In my experience, once fundamental misconceptions about science are introduced to the policy community, they are difficult to correct. Moreover, confusion and embarrassment produced by the process of rooting out misconceptions can tarnish a policymaker's image of science.

References

1. J. L. Lean, *Geophys. Res. Lett.* **33**, L15701 (2006).
2. R. E. Benestad, "A Phenomenological Sequel," RealClimate.org, http://www.realclimate.org/index.php/archives/2007/11/a-phenomenological-sequel.

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Publication of the recent Opinion piece by Nicola Scafetta and Bruce West struck me as potentially blurring the distinction between a peer-reviewed journal article and an opinion piece. Presumably, opinion pieces are held to a dramatically lower standard than journal articles are in terms of peer review, burden of proof, and weight of scientific evidence. Yet publishing something dubbed "opinion" that contains scientific declarations of fact or scientific assertions effectively blurs the crucial distinction between opinions and peer-reviewed research articles. PHYSICS TODAY's audience seems to have a broad focus and therefore to be less likely to evaluate the substance of the scientific claims raised in that or similar pieces.

As has been noted in journalism circles, from the perspective of the public and no doubt elements of the science community as well, "the distinction between reporting and commentary has seriously eroded."[1] The same may well be true for scientific journals; distinctions between opinions and research articles are largely meaningless to those outside science, and that blurring may misinform public perceptions.

The net effect is that the scientific community is more or less obligated to respond to scientific claims made in opinion pieces just as if they had met the standards of scholarly peer review. The burden of proof then switches from those making claims to the science community at large for disproving each and every such claim.

I urge the editors of professional science journals, including PHYSICS TODAY, to revisit their policies and procedures regarding what constitutes an article versus an opinion. Such distinctions are not without consequence.

Reference

1. Project for Excellence in Journalism, *The State of the News Media 2004: An Annual Report on American Journalism*, http://www.stateofthenewsmedia.org/2004/journalist_survey_prc1.asp.

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We enjoyed the article titled "Is Climate Sensitive to Solar Variability?" We commend Nicola Scafetta and Bruce West for their courage in publishing a scientific piece that presents a socially and politically unpopular position.

However, we are concerned about the article's placement in PHYSICS TODAY as an opinion piece. Considering the physical arguments, the reliance on observational and citable data sets, and the attention to mathematical rigor, we wonder what portion of the article is opinion.

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It is good that PHYSICS TODAY reported on the work of Nicola Scafetta and Bruce West. They have done by far the best work in relating solar variability to terrestrial climate, bringing sophistication and rigor to a field dominated mostly by unsupportable positions that the Sun's effect is negligible on the one hand, or is responsible for nearly all observed global warming on the other. That solar variability has appreciable coupling to Earth's climate becomes obvious when an observer notes the imprint of the Schwabe sunspot cycle on the climate temperature record.[1] The identical scaleless noise spectra for solar and terrestrial climate fluctuations provide additional support for coupling and for regarding the Earth–Sun network as a complex system.

Unfortunately, the Intergovernmental Panel on Climate Change clings to its position that solar variability effects are negligible, to the detriment of its credibility. Given known solar variability, the IPCC position can be rationalized only