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A weblog on climate, global change and climate measurements

« 2013 in review

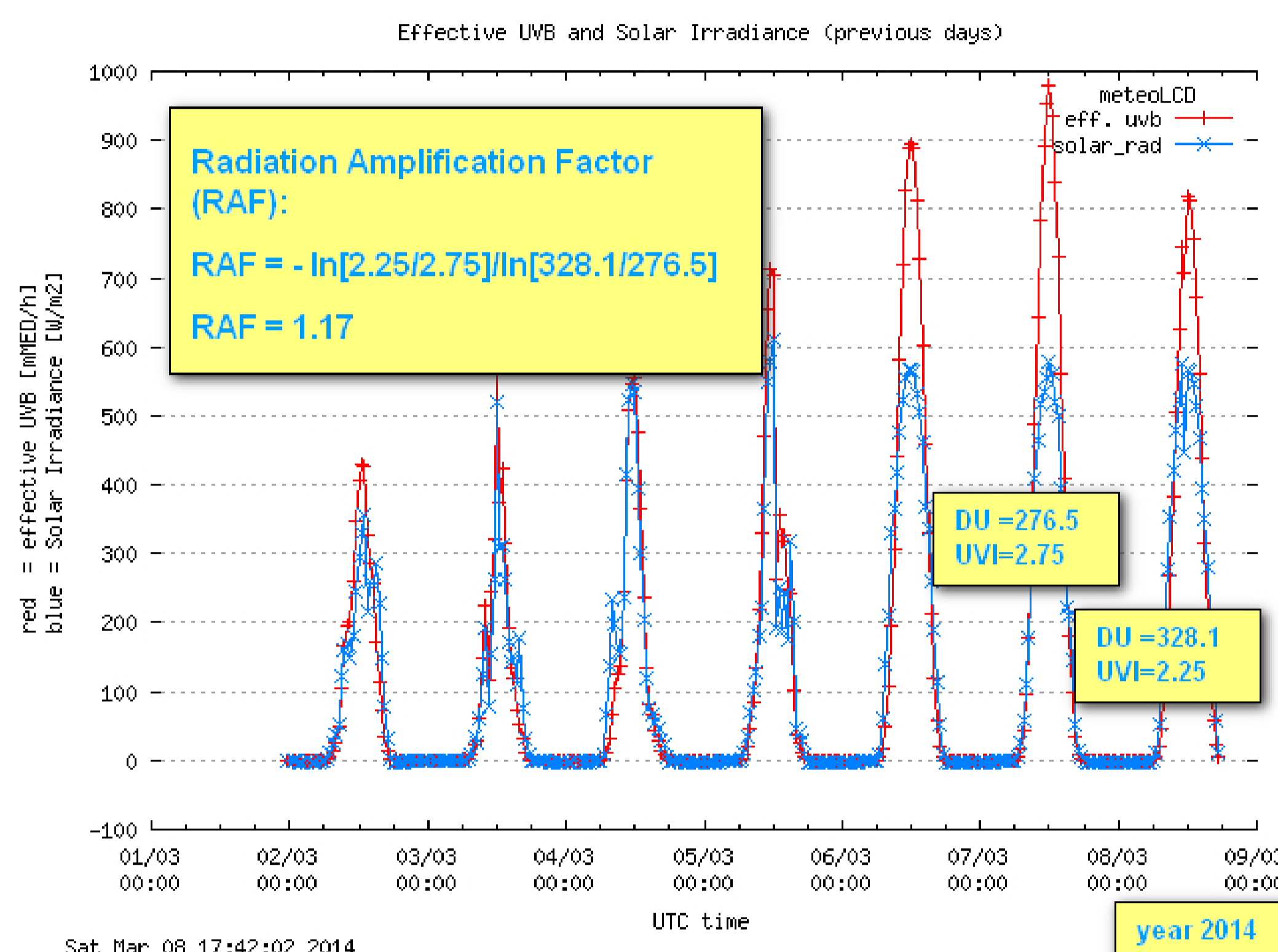
Radon washout (2) »

RAF revisited (total ozone column and UVI)

In April 2013 I used a period where total ozone column (TOC) made a spectacular plunge to calculate the RAF (Radiation Amplification Factor) which tells us by how much the UVI (or biologically effective UVB) will increase when the total ozone column becomes smaller. This month (March 2014) we had a relatively low TOC of 276.5 DU the 7th March, followed the next day by a DU of 328.1. Sky conditions, total solar irradiance and solar angle were practically the same, so that TOC is the only factor influencing UVI. The calculation gives an $RAF = 1.17$, similar to the value found last year. Broadly speaking, if TOC diminishes by 20%, UVI increases by 20% (here -18.7% for DU and +18.2% for UVI).

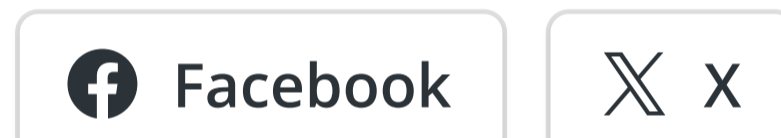
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See also this [paper](#) from last year.



The values used to compute the RAF are the UVI's, which are proportional to the mMED/h given as red curve in the graph (1000 mMED/h = 25/9 UVI, see [here](#)).

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First Radiation Amplification factor for 2016 | meteoLCD Weblog Says:
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[...] several previous posts (here and here) I commented on the RAF (Radiation Amplification Factor) which tells us how much a [...]

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[...] thickness of the ozone layer(TOC) and the UVB radiation at ground level (see paper, and comments here, here. Roughly speaking, the ozone column is a filter for UVB, so when this filter becomes thinner [...]

Radiation Amplification Factor RAF in April 2021 | meteoLCD Weblog Says:
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[...] [3] MASSEN, Francis, 2014 : RAF revisited (link) [...]

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[...] [4] MASSEN, Francis, 2014 : RAF revisited (link) [...]

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