

Posting type	Advisory, updated to cover calibrated HIPS data (2015)
Subject	Bias between masked and unmasked light absorption measurements
Module/Species	A/ Fabs
Sites	Entire network
Period	Before 2008
Recommendation	Recognize the effect of mask removal on reported absorption.
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Supporting information

[Masks were historically used](#) at many sites to reduce the nominal collection area of A-module filters from 3.53 cm² to 2.20 cm². As recently as 2003, masks were employed at approximately half of all sites; by the end of 2007, all masks had been removed.

IMPROVE's Hybrid Integrating Plate/Sphere (HIPS) is designed to measure the absorption thickness of a Teflon filter sample. HIPS data back to 2003 were [redelivered in 2015](#) with an improved calibration that provides more accurate absorption values. An earlier version of this advisory covered the uncalibrated light absorption parameters now renamed fAbs_HIPS and fAbs_LIPM, and demonstrated an inequivalence between measurements on masked and unmasked samples. A comparable inequivalence remains in the newly calibrated data, as shown below.

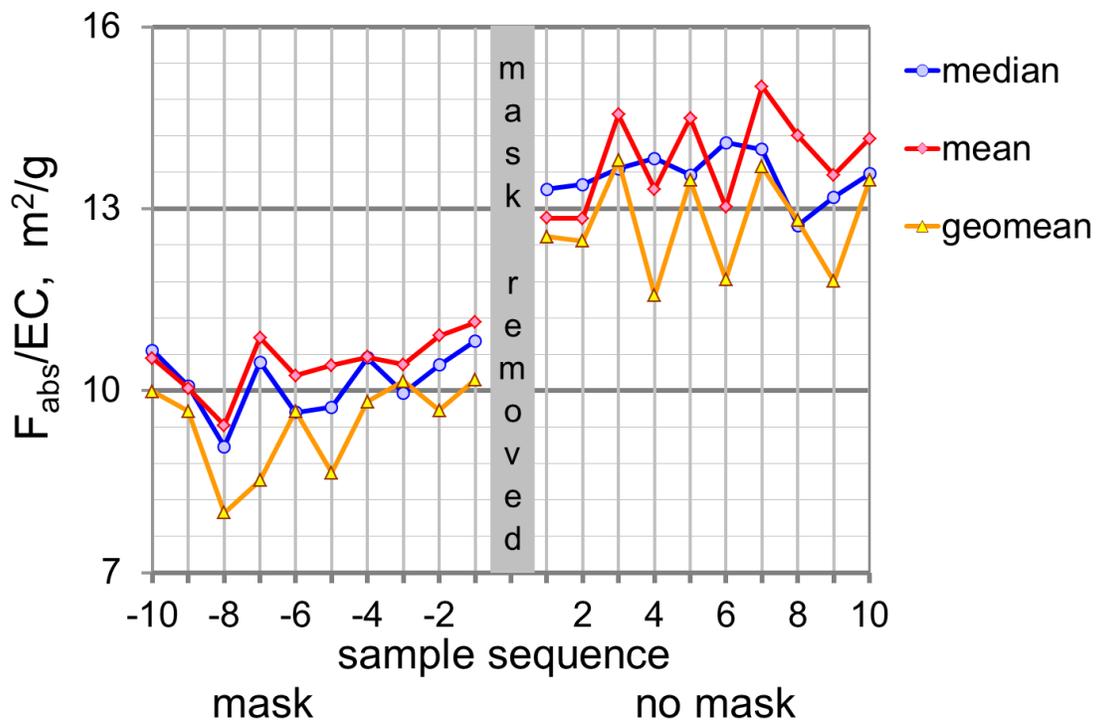


Figure. Measured Fabs/EC ratios at 55 sites that were converted from masked to unmasked operation around the beginning of 2004. The 55-site medians, arithmetic means, and geometric means are shown for each of the 10 sampling days immediately preceding and following conversion at each site.