Table S1. Regression statistics for systematic relationship between (a) $\sigma_{sp}$ and $\sigma_{ap}$, (b) $\sigma_{sp}$ and SSA, and (c) $\sigma_{sp}$ and SÅE.

<table>
<thead>
<tr>
<th>Source Region</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Slope (Unitless)</td>
<td>Intercept (Mm$^{-3}$)</td>
<td>Slope (Mm)</td>
</tr>
<tr>
<td>Pacific Ocean</td>
<td>$7.89 \times 10^{-2}$</td>
<td>-0.008</td>
<td>$5.55 \times 10^{-3}$</td>
</tr>
<tr>
<td>NE Asia</td>
<td>$4.31 \times 10^{-2}$</td>
<td>0.060</td>
<td>$2.75 \times 10^{-3}$</td>
</tr>
<tr>
<td>SE Asia</td>
<td>$1.27 \times 10^{-1}$</td>
<td>0.034</td>
<td>$5.58 \times 10^{-3}$</td>
</tr>
</tbody>
</table>
Fig. S1. Histograms for aerosol scattering (left panel) and absorption (right panel) coefficients during 1974-2015 at MLO for all period (black) and LLI period (red), respectively.