

# 1 Influence of vegetation on occurrence and time distributions 2 of regional new aerosol particle formation and growth

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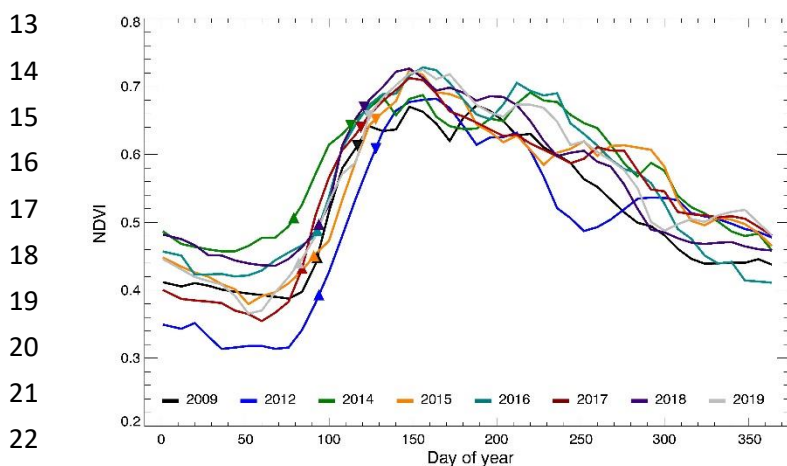
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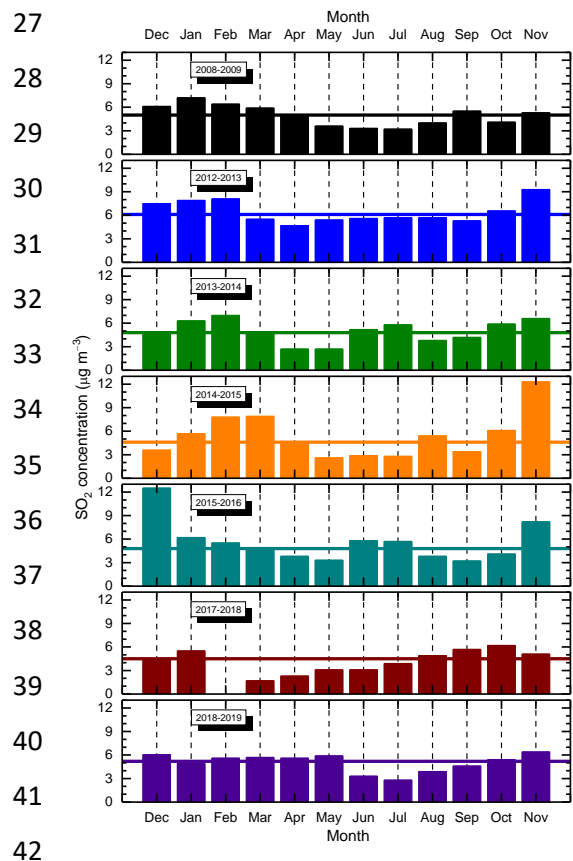
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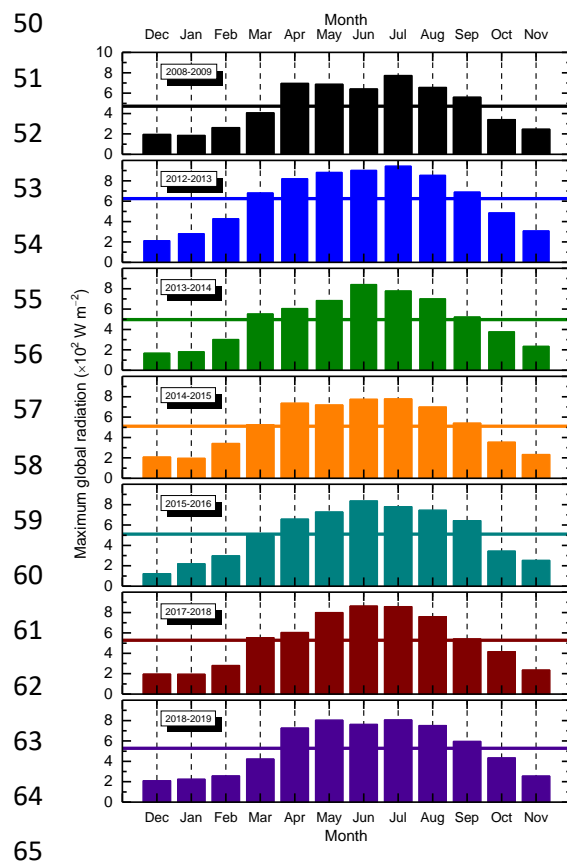
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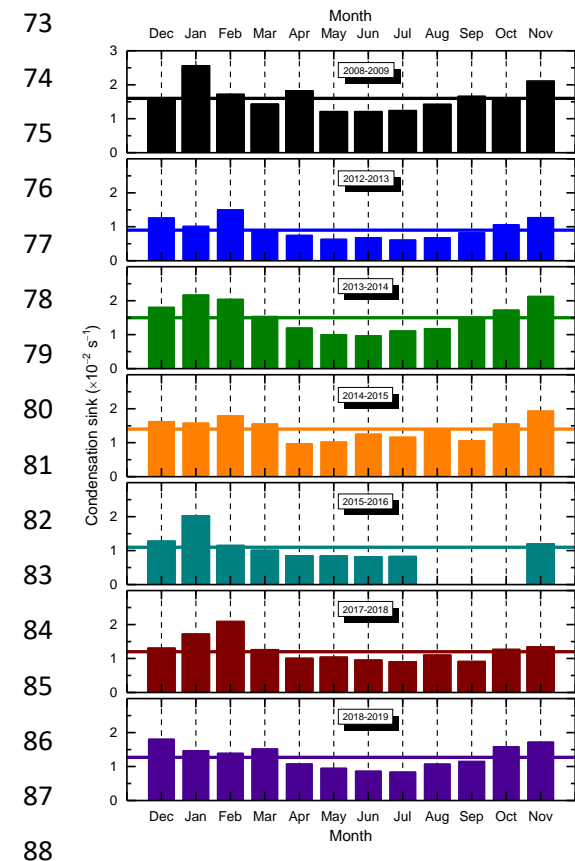
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24 **Figure S1.** Time variation of satellite-based Normalized Difference Vegetation Index (NDVI) and the start of  
25 spring (upper triangle) and end of greening (lower triangle) considering all vegetation types in a circular  
26 geographical area with a radius of 100 km around Budapest for the measurement years.



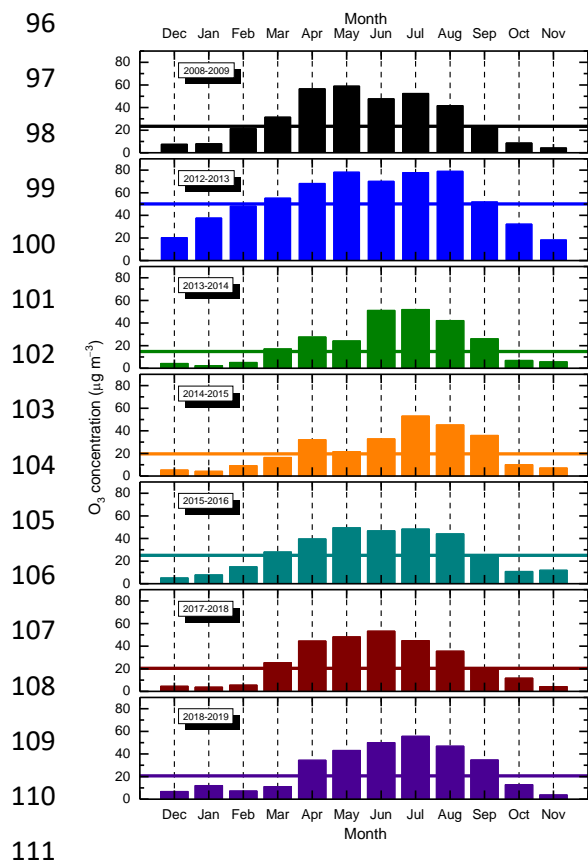
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43 **Figure S2.** Distributions of monthly median  
44  $\text{SO}_2$  concentration for the seven measurement  
45 years. The horizontal lines indicate annual  
46 medians. The measurement year 2012–2013  
47 was accomplished in the near-city background,  
48 while the other years were realised in the city  
49 centre.



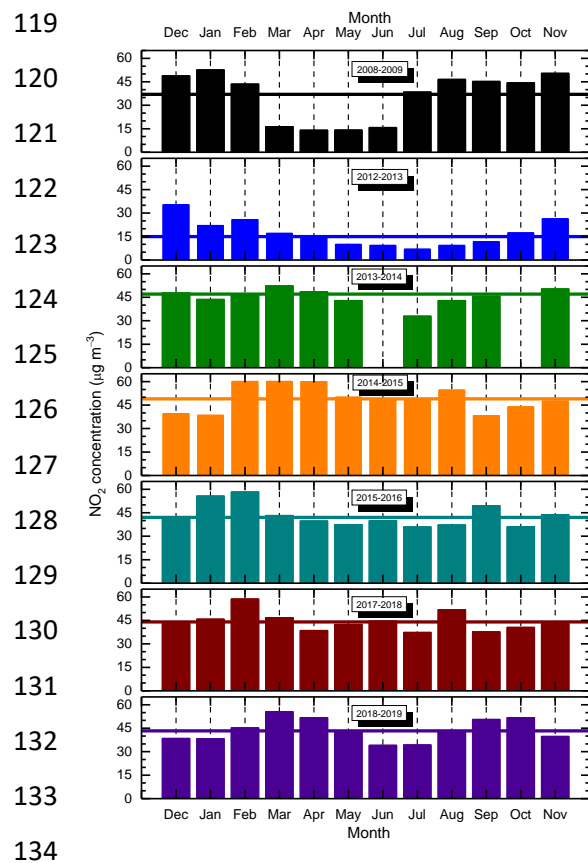
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66 **Figure S3.** Distributions of monthly mean value  
67 of daily maximum global radiation for the seven  
68 measurement years. The horizontal lines  
69 indicate annual means. The measurement year  
70 2012–2013 was accomplished in the near-city  
71 background, while the other years were realised  
72 in the city centre.



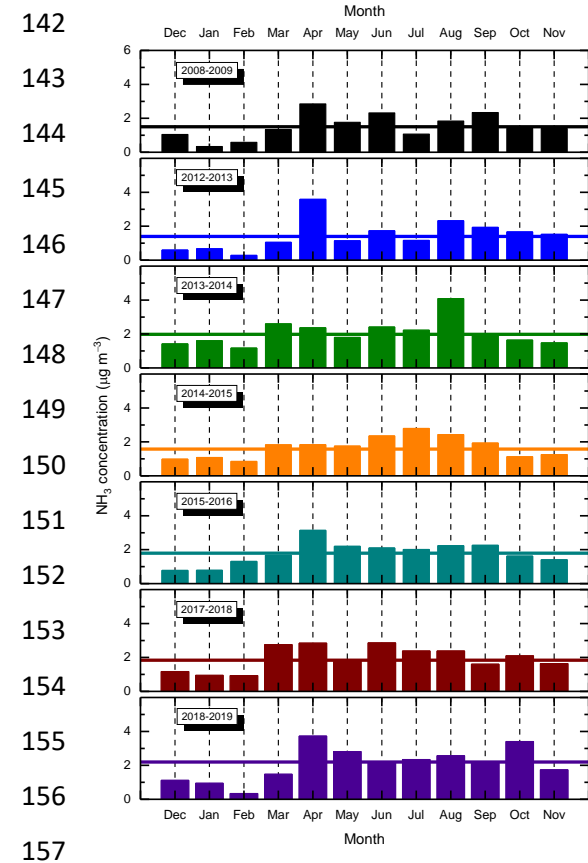
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89 **Figure S4.** Distributions of monthly mean  
90 condensation sink for the seven measurement  
91 years. The horizontal lines indicate annual  
92 medians. The measurement year 2012–2013  
93 was accomplished in the near-city background,  
94 while the other years were realised in the city  
95 centre.



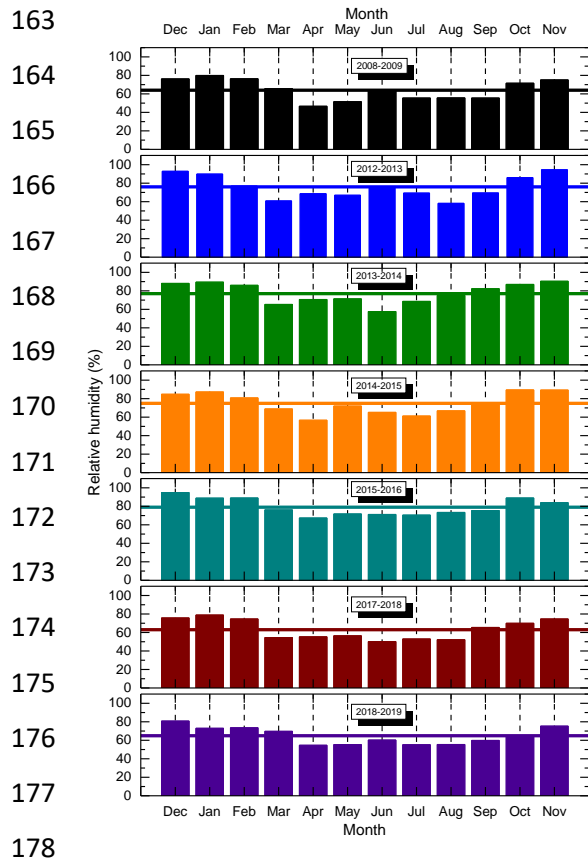
112 **Figure S5.** Distributions of monthly median  $O_3$   
 113 concentration for the seven measurement years.  
 114 The horizontal lines indicate annual medians.  
 115 The measurement year 2012–2013 was  
 116 accomplished in the near-city background,  
 117 while the other years were realised in the city  
 118 centre.



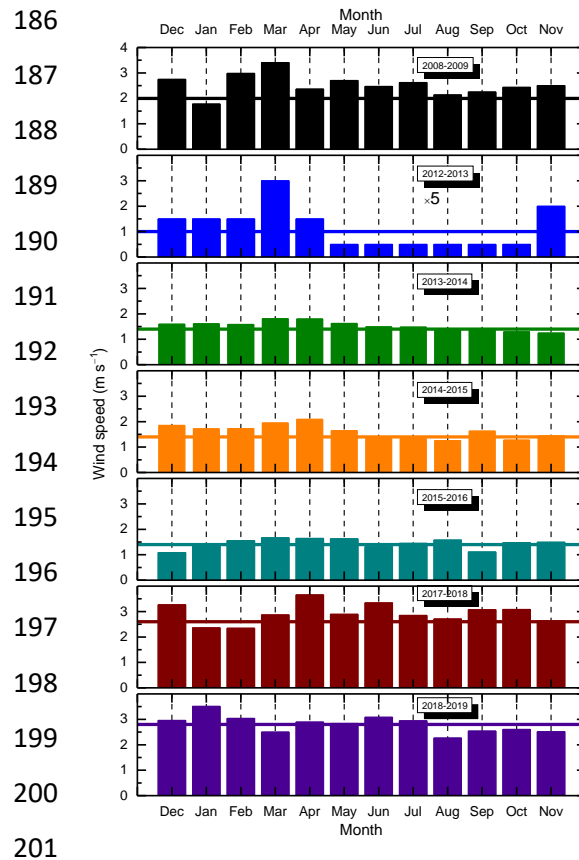
135 **Figure S6.** Distributions of monthly median  
 136  $NO_2$  concentration for the seven measurement  
 137 years. The horizontal lines indicate annual  
 138 medians. The measurement year 2012–2013  
 139 was accomplished in the near-city background,  
 140 while the other years were realised in the city  
 141 centre.



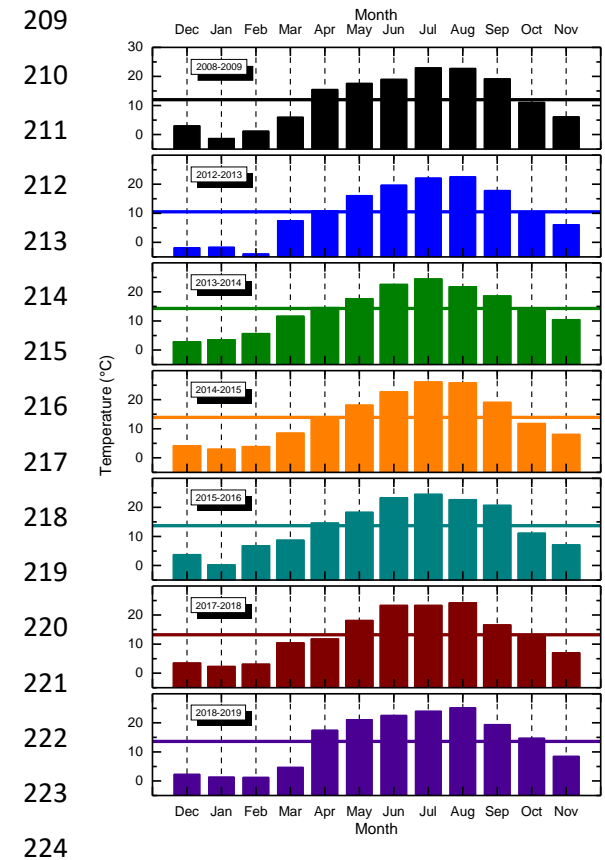
158 **Figure S7.** Distributions of monthly median  
 159  $NH_3$  concentration for the seven measurement  
 160 years. The horizontal lines indicate annual  
 161 medians. The measurements were accomplished  
 162 in the regional background.



179 **Figure S8.** Distributions of monthly mean  
 180 relative humidity for the seven measurement  
 181 years. The horizontal lines indicate annual  
 182 means. The measurement year 2012–2013 was  
 183 accomplished in the near-city background,  
 184 while the other years were realised in the city  
 185 centre.

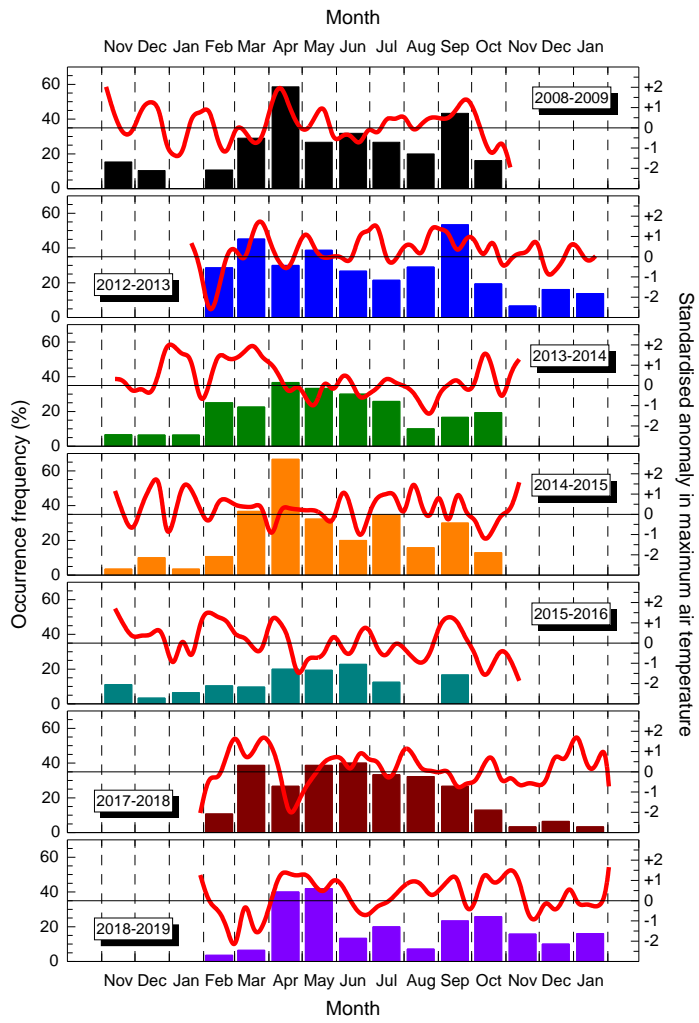


202 **Figure S9.** Distributions of monthly mean wind  
 203 speed for the seven measurement years. The  
 204 horizontal lines indicate annual means. The  
 205 measurement year 2012–2013 was  
 206 accomplished in the near-city background,  
 207 while the other years were realised in the city  
 208 centre.

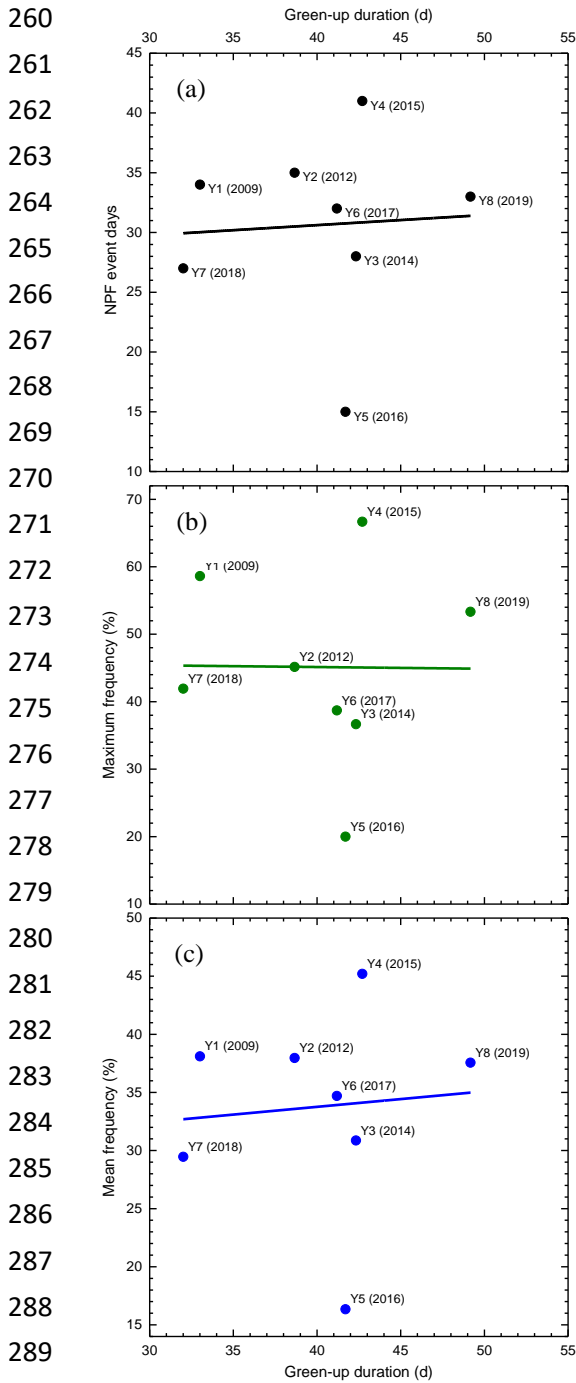


225 **Figure S10.** Distributions of monthly mean air  
 226 temperature for the seven measurement years.  
 227 The horizontal lines indicate annual means. The  
 228 measurement year 2012–2013 was  
 229 accomplished in the near-city background,  
 230 while the other years were realised in the city  
 231 centre.

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255 **Figure S11.** Time distributions of maximum air temperature anomaly standardised to annual SD above vegetated  
 256 territories (red lines) and of monthly mean relative occurrence frequency of NPF event days (column charts) for  
 257 the seven measurement years. The value for January 2009 is zero, while the values for August and October 2016  
 258 are not available. The measurements in 2012–2013 were performed in the near-city background, while in the other  
 259 years, they were accomplished in the city centre.



291 **Figure S12.** Scatter plots of the green-up duration for all vegetation on one side and the number of NPF event  
 292 days in spring (a), monthly maximum relative NPF occurrence frequency in spring (b) and mean relative  
 293 occurrence frequency for spring (c) on the other side. Labels for the measurement years (Y1–Y8) and the calendar  
 294 year of the spring (in brackets) are also shown. The solid lines represent linear fits and serve to guide the eye.