

Supporting information:

Ecosystem-scale compensation points of formic and acetic acid in the central Amazon

K. Jardine, A. Yañez Serrano, A. Arneth, L. Abrell, A. Jardine, P. Artaxo, E. Alves, J. Kesselmeier, T. Taylor, S. Saleska and T. Huxman

Contents

1. Supplementary **Figure S1**: Formic acid, acetic acid, and methanol branch emission rates from an isolated *Hibiscus rosa-sinensis* branch.
2. Supplementary **Figure S2**: Formic acid, acetic acid, and methanol branch emission rates from an isolated *Spathodea campanulata* branch.
3. Supplementary **Figures S3-S6**. Examples of simultaneous branch emission rates and ambient concentration measurements in the Biosphere 2 tropical rainforest mesocosm.

1. Supplementary Figures

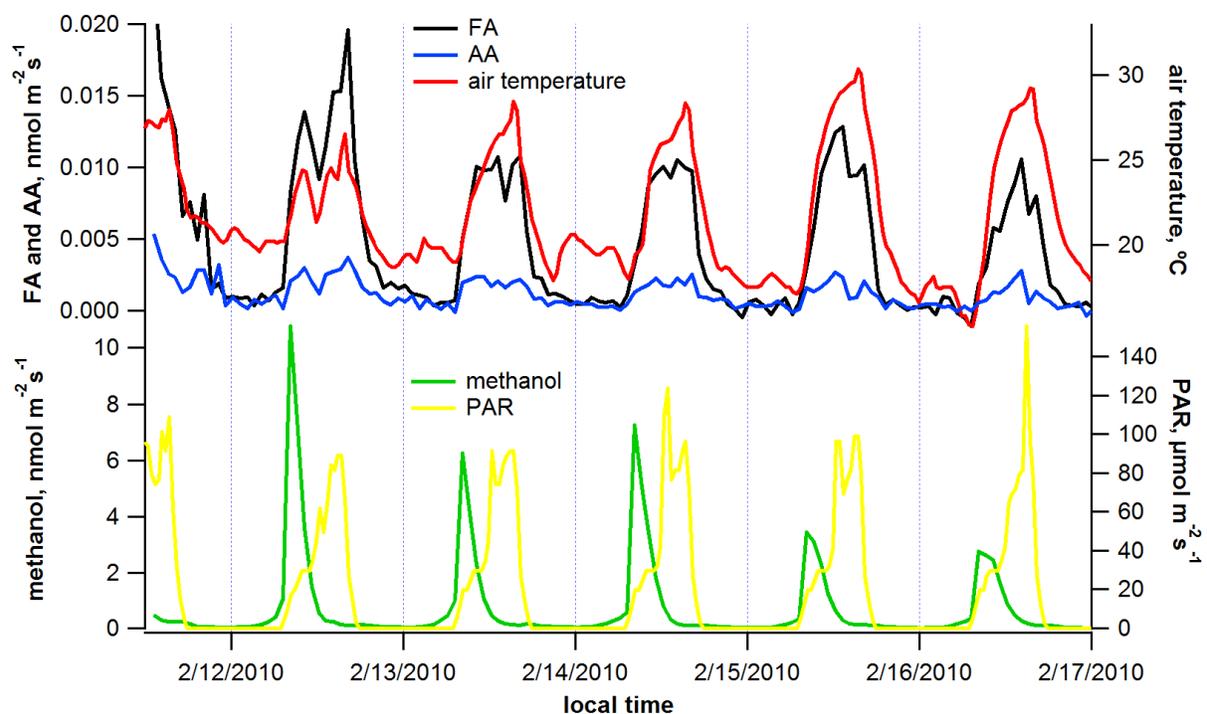


Figure S1. FA, AA, and methanol branch emission rates from an isolated *Hibiscus rosa-sinensis* branch in the Biosphere 2 tropical rainforest mesocosm. Enclosure air temperature and PAR at branch height are also shown. Note the distinct morning burst of methanol suggesting nocturnal

accumulation in leaf aqueous storage pools following release upon stomatal opening. On the other hand, FA and AA do not show a morning burst but rather a strong diurnal pattern closely following temperature and PAR.

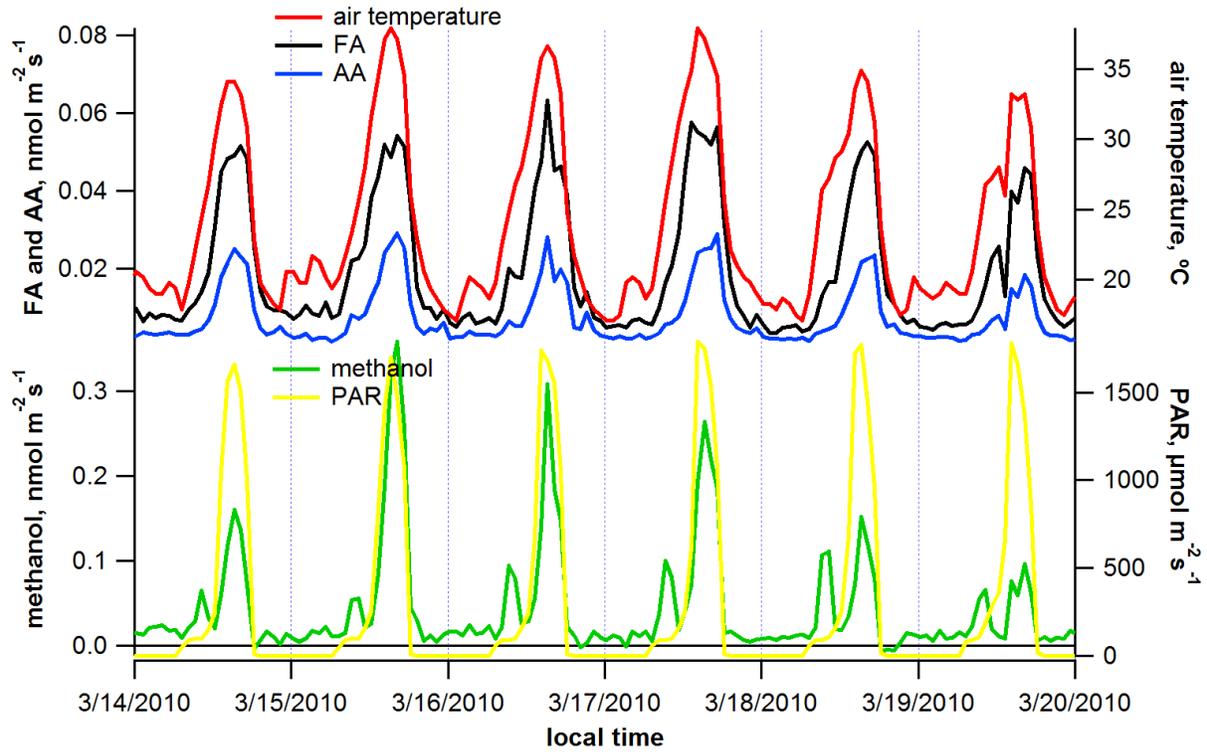


Figure S2. FA, AA, and methanol branch emission rates from an isolated *Spathodea campanulata* branch in the Biosphere 2 tropical rainforest mesocosm. Enclosure air temperature and PAR at branch height are also shown. Note the distinct morning burst of methanol suggesting nocturnal accumulation in leaf aqueous storage pools following release upon stomatal opening and the strong light dependent emissions during the day. In contrast, FA and AA emissions appear to be less light dependent with significant emissions under elevated morning temperatures with low PAR.

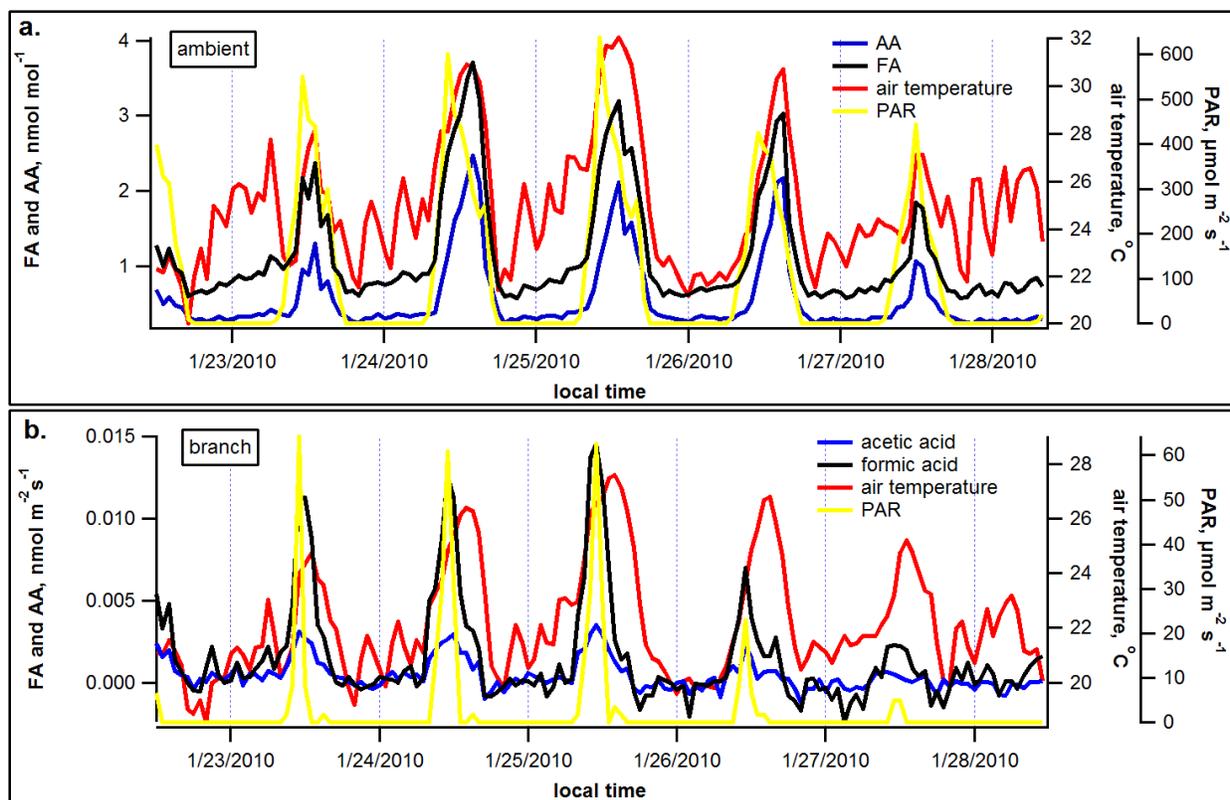


Figure S3. Example of simultaneous FA and AA time series in the Biosphere 2 tropical rainforest mesocosm (a) ambient concentrations in the mesocosm (16 m height) (b) branch emission rates from an isolated *M. indica* branch. Temperature and PAR are also shown (ambient conditions at 20 m height in mesocosm and in the branch enclosure).

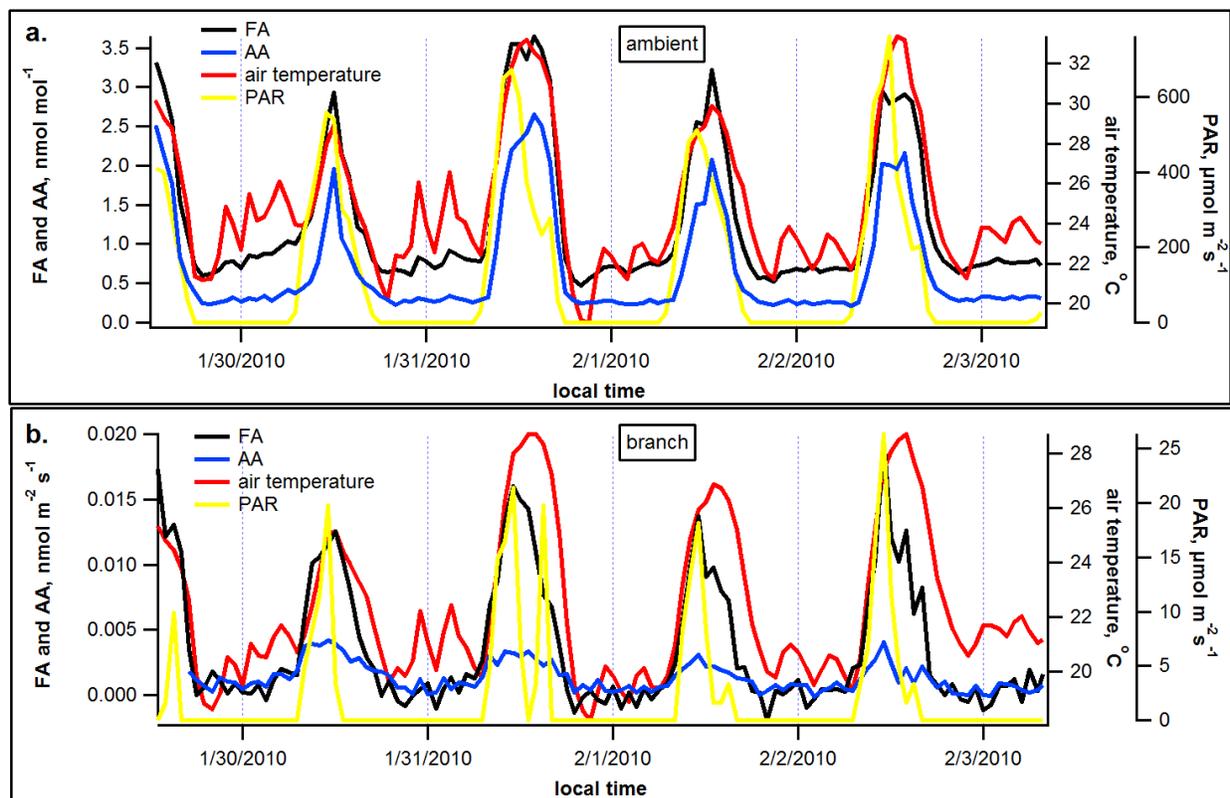


Figure S4. Example of simultaneous FA and AA time series in the Biosphere 2 tropical rainforest mesocosm (a) ambient concentrations in the mesocosm (16 m height) (b) branch emission rates from an isolated *P. indicus* branch. Temperature and PAR are also shown (ambient conditions at 20 m height in mesocosm and in the branch enclosure).

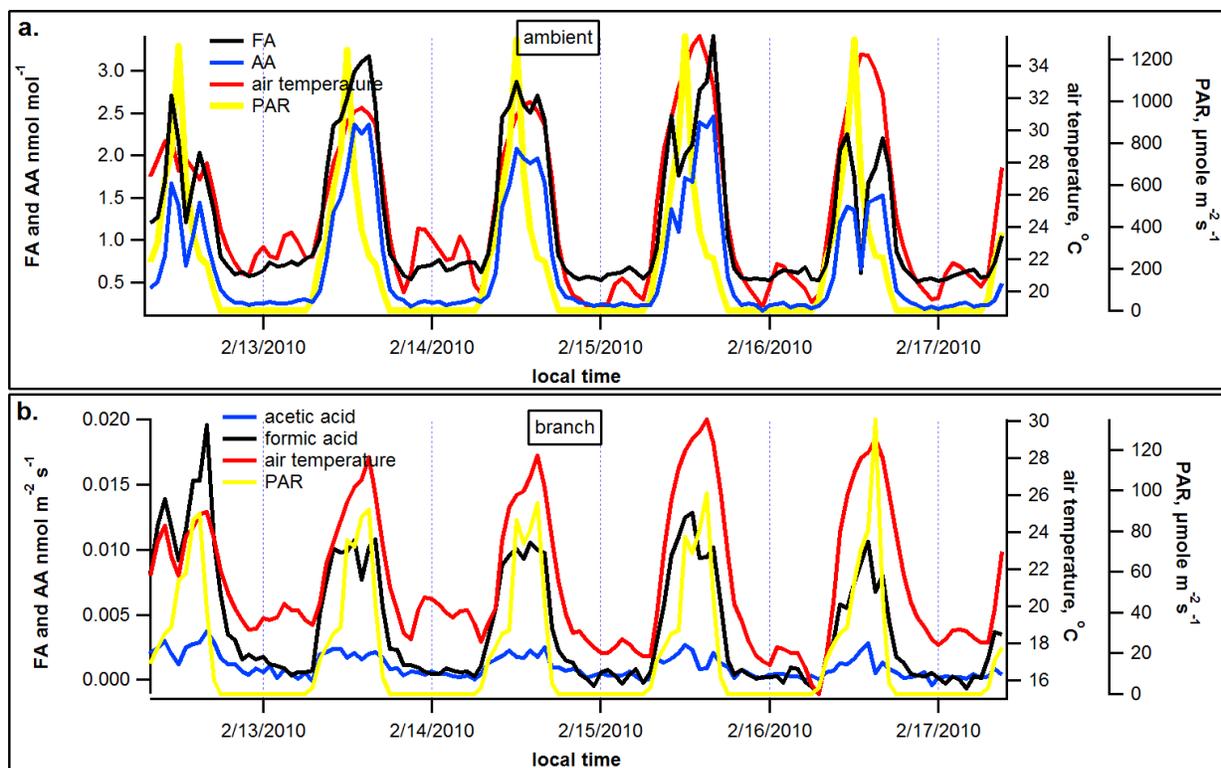


Figure S5. Example of simultaneous FA and AA time series in the Biosphere 2 tropical rainforest mesocosm (a) ambient concentrations in the mesocosm (16 m height) (b) branch emission rates from an isolated *H. rosa-sinensis* branch. Temperature and PAR are also shown (ambient conditions at 20 m height in mesocosm and in the branch enclosure).

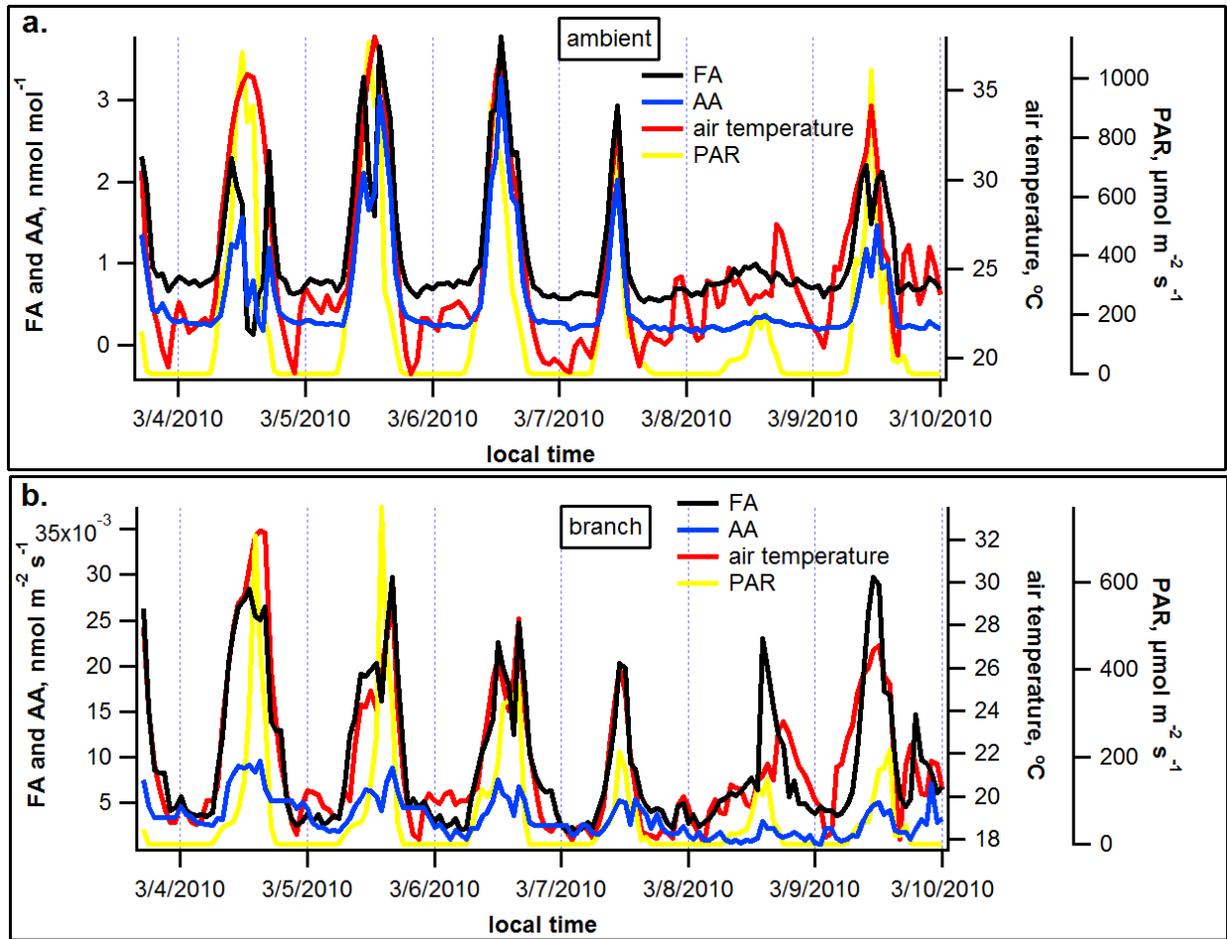


Figure S6. Example of simultaneous FA and AA time series in the Biosphere 2 tropical rainforest mesocosm (a) ambient concentrations in the mesocosm (16 m height) (b) branch emission rates from an isolated *C. indica* branch. Temperature and PAR are also shown (ambient conditions at 20 m height in mesocosm and in the branch enclosure).