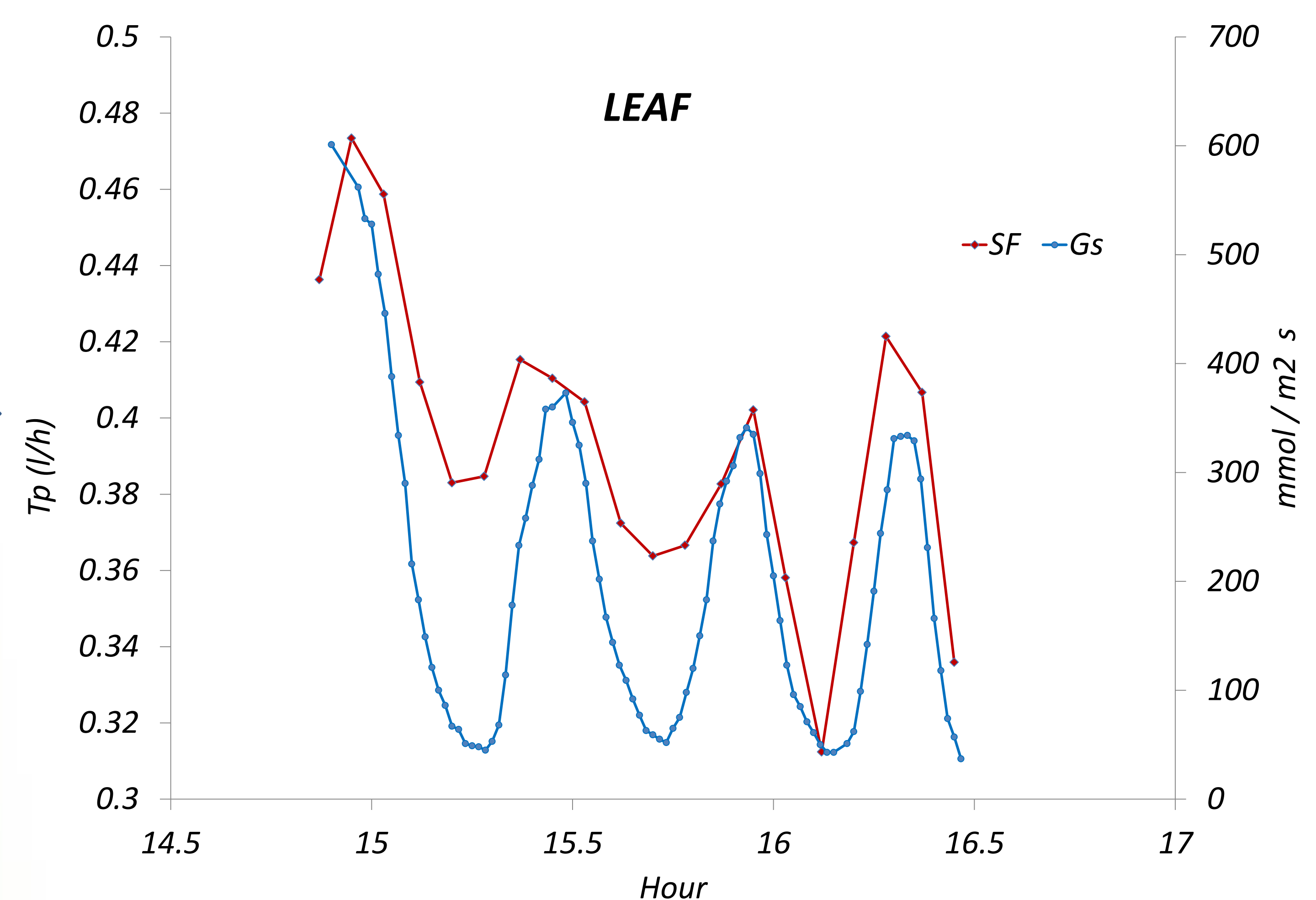
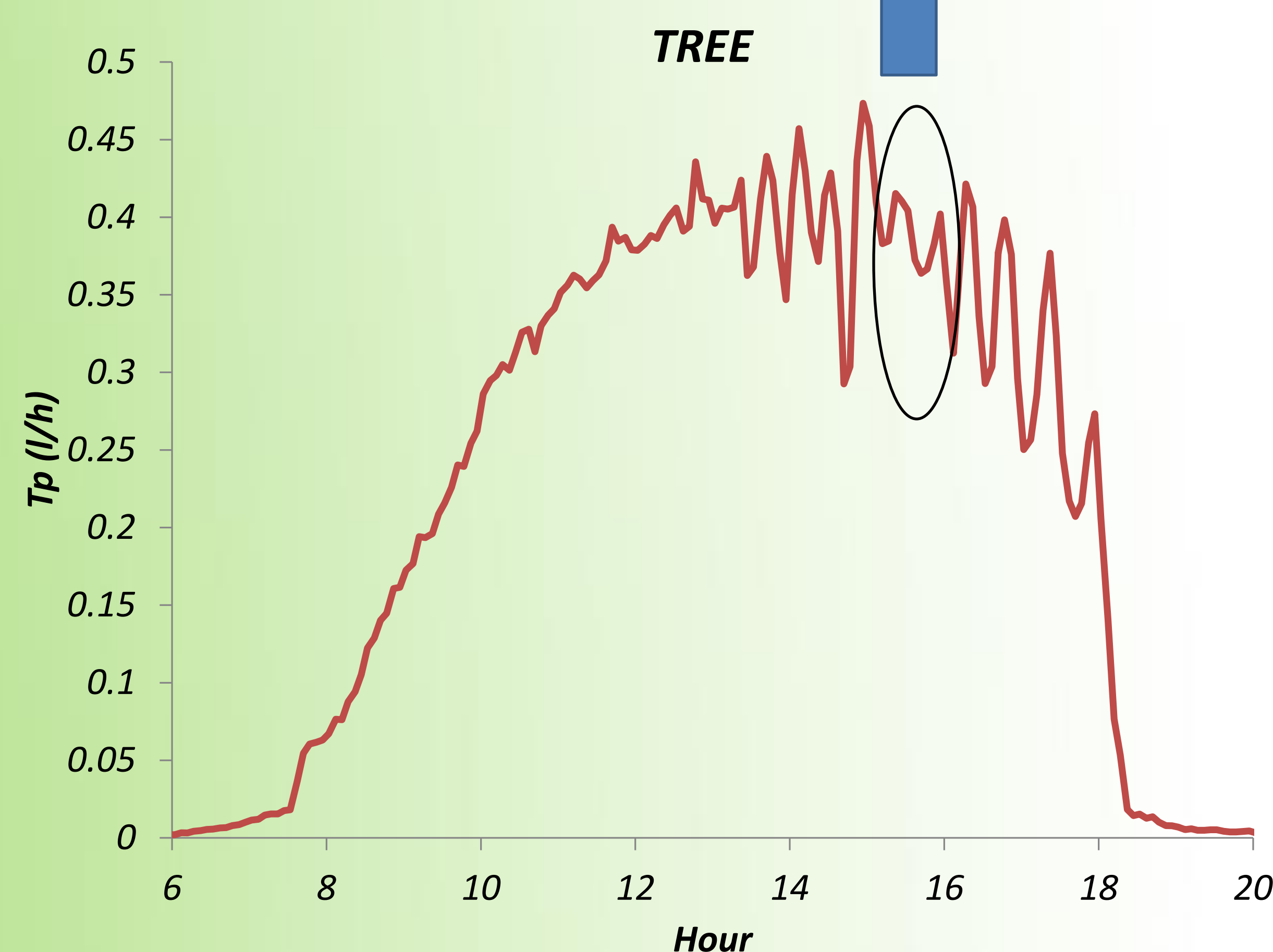


STOMATAL OSCILLATIONS ON POTTED OLIVE TREES

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Introduction: Oscillations in stomatal conductance or in some of the variables related, such as transpiration or leaf temperature have been described for numerous herbaceous and tree species. The period of such oscillations can be either short (<15 min), being damped after few cycles, or long (30-50 min), occurring during several hours. Some evidence suggests that oscillations with larger periods are more related to changes in plant water status. The present study shows long-term oscillations taking place in five years potted olive trees

Materials and Methods: Transpiration (E_p) was determined every 5 min using compensated heat pulse probes placed at the tree trunk. At the same time, stomatal conductance to water (G_{sw}) was continuously measured in a single leaf, using a portable gas analyzer.



Results: Our results showed the occurrence of clear oscillations in both, E_p and G_{sw} . At the leaf level, the recorded values of G_{sw} , changed from near 0 to 350 $\text{mmol m}^{-2} \text{s}^{-1}$. On the other hand, E_p fluctuated in a synchronous manner with the measured leaf, meaning that, the rest of the leaves in the tree were following the same oscillatory pattern.

Conclusions: According to the present results, care should be taken when collecting discrete values of leaf conductance or of their related variables at least at pot level.

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