1. INTRODUCTION

Seagrass photosynthesis, and thereby, their productivity is directly regulated by underwater irradiance (Dennison et al., 1993). Numerous studies have shown that seagrass regrowth is also caused by reductions of underwater light, mainly due to the increase of turbidity as a consequence of anthropogenic activities.

In this context, Pulse Amplitude Modulated (PAM) fluorometry has recently been recognized as an efficient technique for the study of photosynthetic dynamics of marine plants. The emerging use of PAM fluorometry is linked to the possibility to carry out rapid, non-destructive and accurate in situ measures.

The aim of this study was to investigate the response of Posidonia oceanica to different light environments through fluorometric (Fv/Fm, Yll), ETR and photosynthetic (Pmax, α, β, Ek) parameters, as measured by PAM fluorometry.

2. STUDY AREA

In June 2018 (POSI_PAM1), a first sampling survey was organized to develop an optimal operational protocol. In August 2018 (POSI_PAM2), operations were replicated with the purpose of showing the plant response to daily light variation, samplings were repeated three times a day, respectively at 9:00, 12:00 and 15:00 UTC.

In each occasion, three shoots were collected and, after being acclimated to dark for 15 minutes, the first two intermediate leaves of each shoot were subjected to SAT Pulse and RLC Analysis. Morphometric analysis was realized by obtaining the Leaf Area Index per shoot.

Besides the values of temperature and conductivity of water, aerial PAR was measured by a meteorological station, while a sensor of PAR underwater was positioned inside the patch. Statistical analysis of results concerned ANOVA and Kruskal-Wallis test.

3. MATERIALS and METHODS

4. RESULTS

Flurometric parameters

<table>
<thead>
<tr>
<th>POSI_PAM1</th>
<th>POSI_PAM2</th>
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<tr>
<td>9:00 h (UTC)</td>
<td>12:00 h (UTC)</td>
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<tr>
<td>POS08A</td>
<td>POS08B</td>
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5. CONCLUSIONS

Results from both surveys show that POS08B has the highest fluorometric and photosynthetic parameters. This suggests that those patches could have better photosynthetic efficiency and capacity of photoacclimation. This hypothesis is sustained by the Leaf Area Index per shoot obtained for POS08B, thus indicating that leaves have an adequate area for catching the light. We can deduce that plants at 5 meters depth find all necessary conditions to develop a better photosynthetic system than other stations, even if they present the same level of photoacclimation, as shown by the equal Fv/Fm results, obtained for all stations in both surveys.

6. REFERENCES
