Aims

- To obtain reliable information about the net ecosystem exchange of CO$_2$ between the surface and the air in typical (both irrigated and non-irrigated) croplands in South Korea.
- To better understand the dynamics of agro-ecosystem CO$_2$ exchange during the whole growing period.

* including peach, grape, watermelon, lettuce, etc
**Biomass & Light**

\[
\text{NEE} = \frac{\alpha R_g \beta}{\alpha R_g + \beta} + R_{\text{eco}}
\]

\[
R_{\text{eco}} = R_{\text{ref}} e^{E_0 \left( \frac{1}{T_{\text{ref}} - T_0} - \frac{1}{T - T_0} \right)}
\]

---

**Clear vs. Cloudy**

<table>
<thead>
<tr>
<th></th>
<th>(\alpha')</th>
<th>(\beta')</th>
<th>(\alpha')</th>
<th>(\beta')</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>-0.024</td>
<td>-8.8</td>
<td>-0.029</td>
<td>-11.2</td>
</tr>
<tr>
<td>Potato</td>
<td>-0.040</td>
<td>-15.2</td>
<td>-0.040</td>
<td>-15.5</td>
</tr>
</tbody>
</table>
Vapour pressure deficit & temperature

Graphical representation of the relationship between NEE (μmol m⁻² s⁻¹) and VPD (Pa) against temperature (K), showing correlation between normalized standard deviation and correlation coefficient.
Acknowledgment
This study was carried out as part of the International Research Training Group TERRECO (GRK 1565/1) funded by the Deutsche Forschungsgemeinschaft (DFG) at the University of Bayreuth, Germany and the Korean Research Foundation (KRF) at Kangwon National University, Chuncheon, S. Korea.

References
● Zhao, P., Lüers, J., Olesch, J., Foken, T. Arbeitsergebnisse 45. ISSN 1614-891, 2011