EGU General Assembly 2021

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# Maximum soil organic matter decomposition along temperature gradient in Colombian topsoils: Dry Forests

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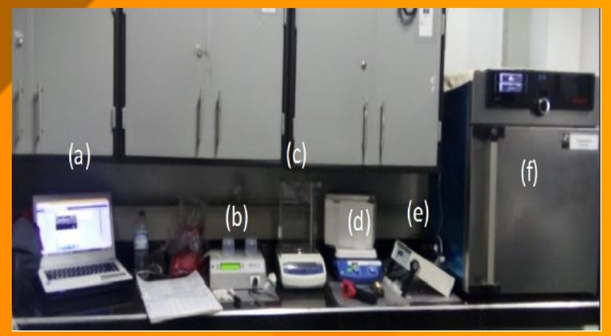
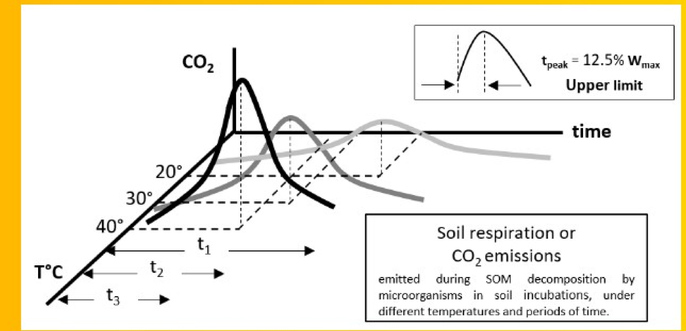
## 1. Materials & Methods

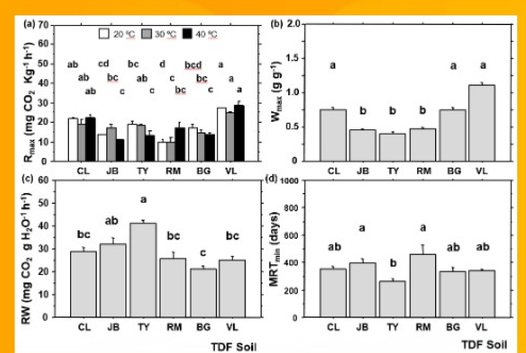



## 2. Study places

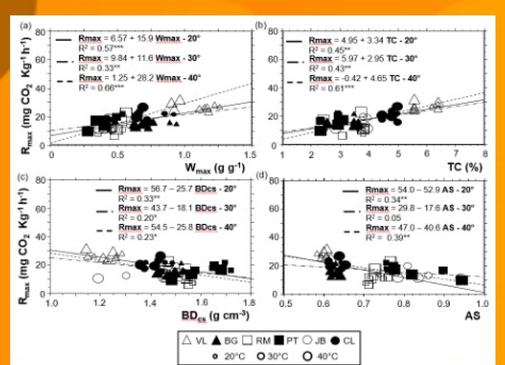
## 3. Soil respiration vs temperature vs time




## 4. Maximum SOM decomposition




## 4. Interactions



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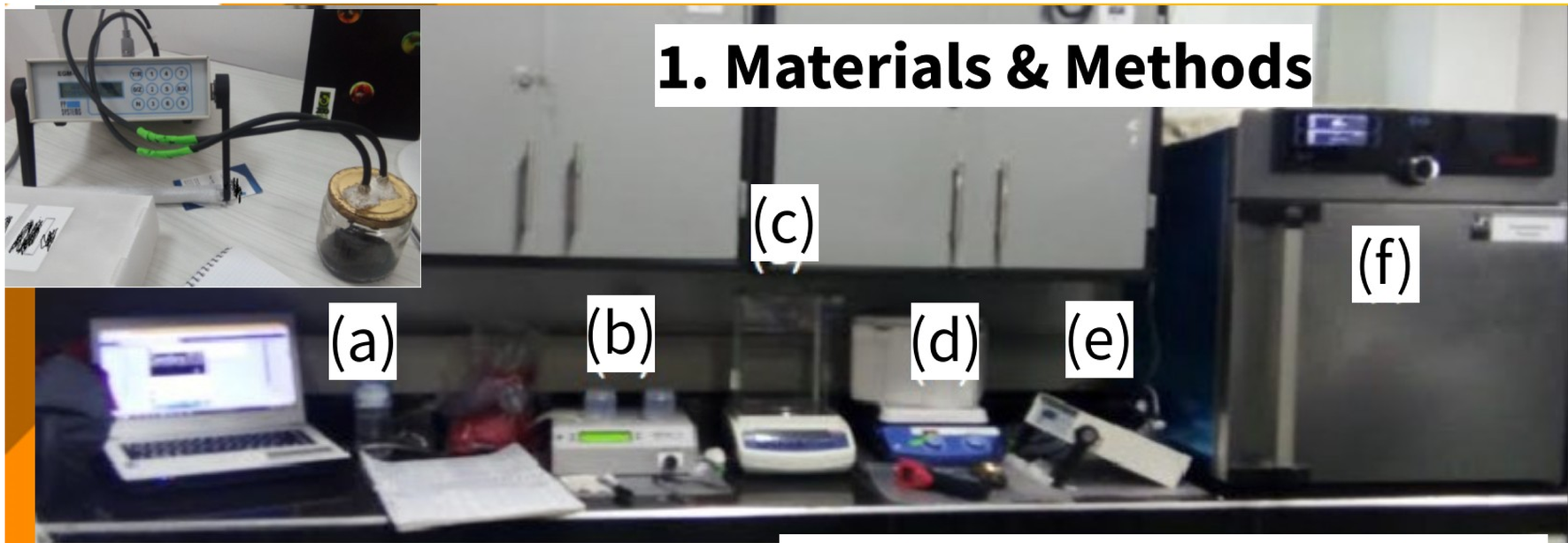
# 1. Materials & Methods




(a) Computer to store $CO_2$ emission records

(b) WP4-T Soil -Water potentiometer

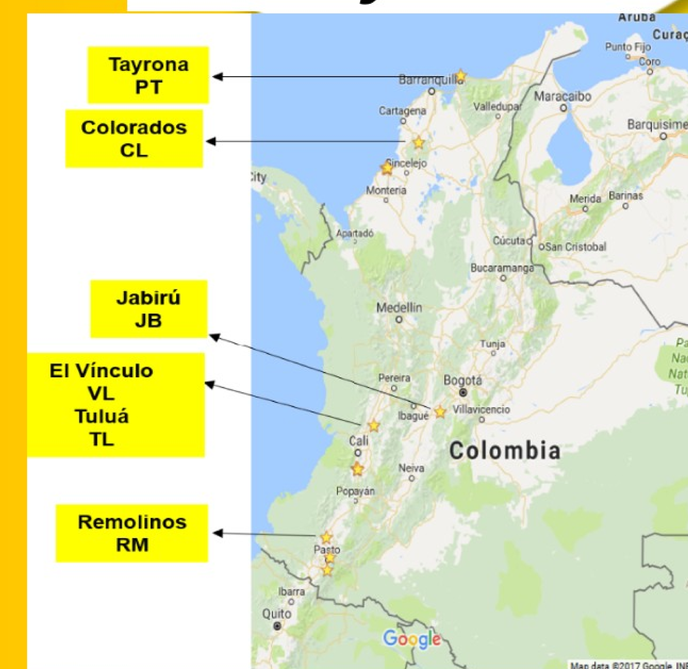
(c) Electronic balance

(d) Heating plate

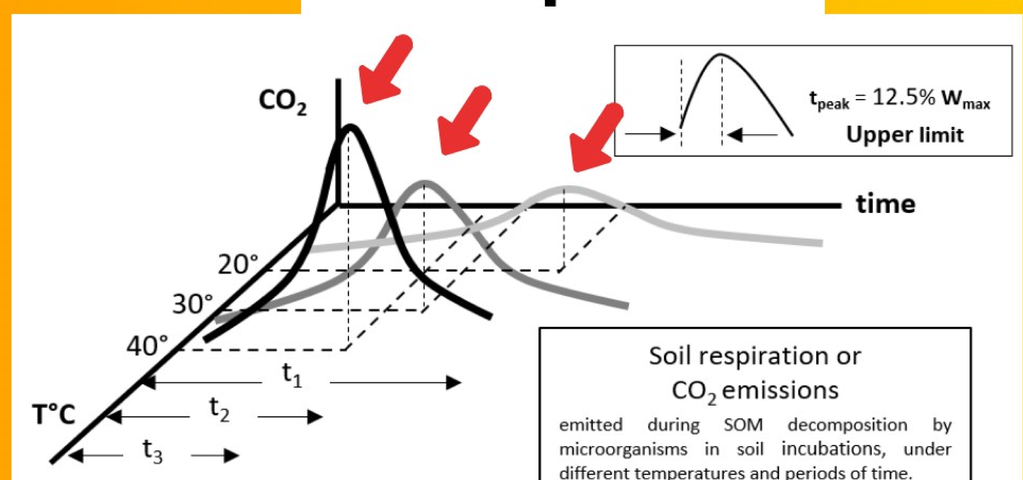
(e) EGM-4 environmental gas analyser

(f) Peltier-cooled incubator

# 2. Study Places




# 3. Soil respiration vs. time vs. temperature



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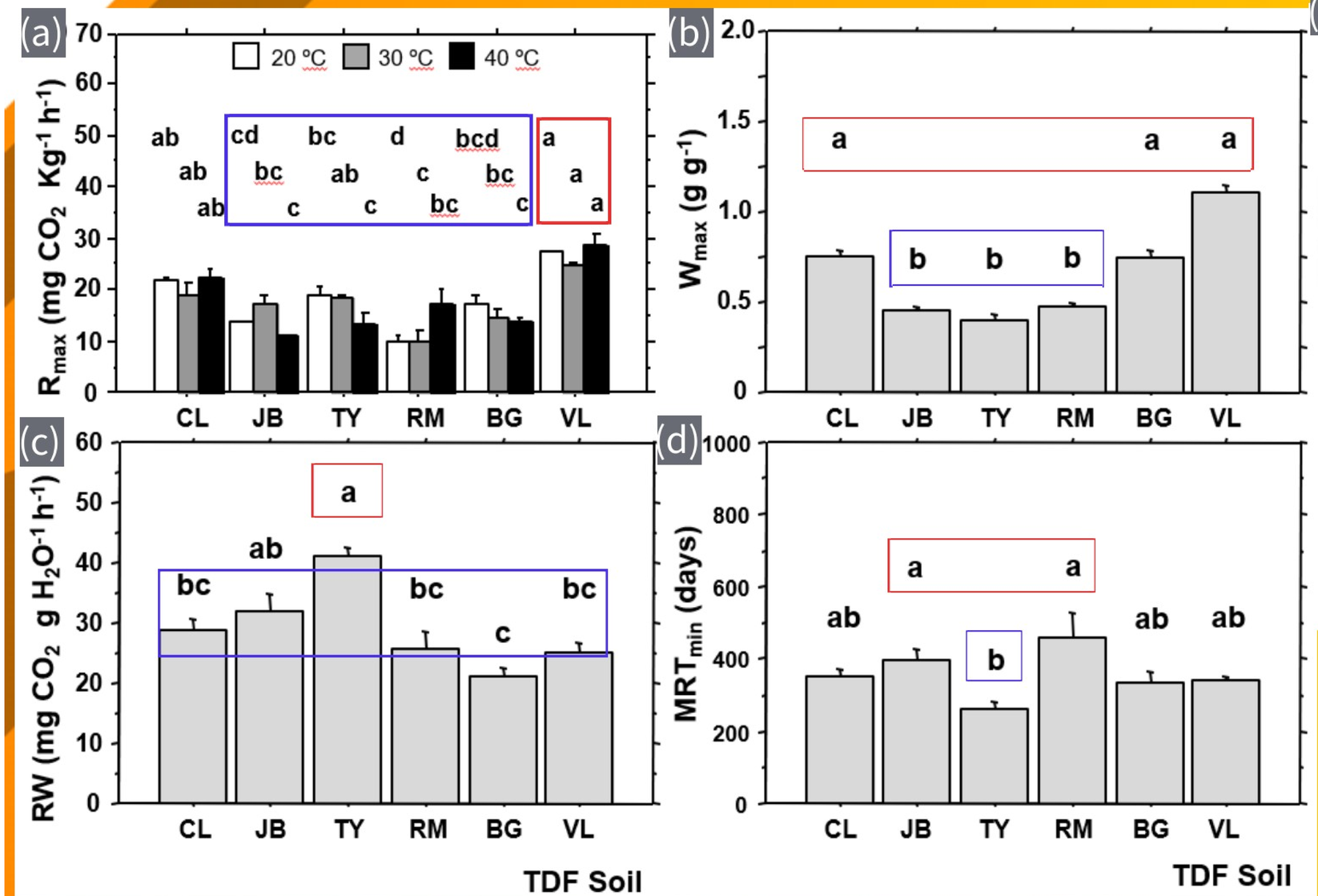
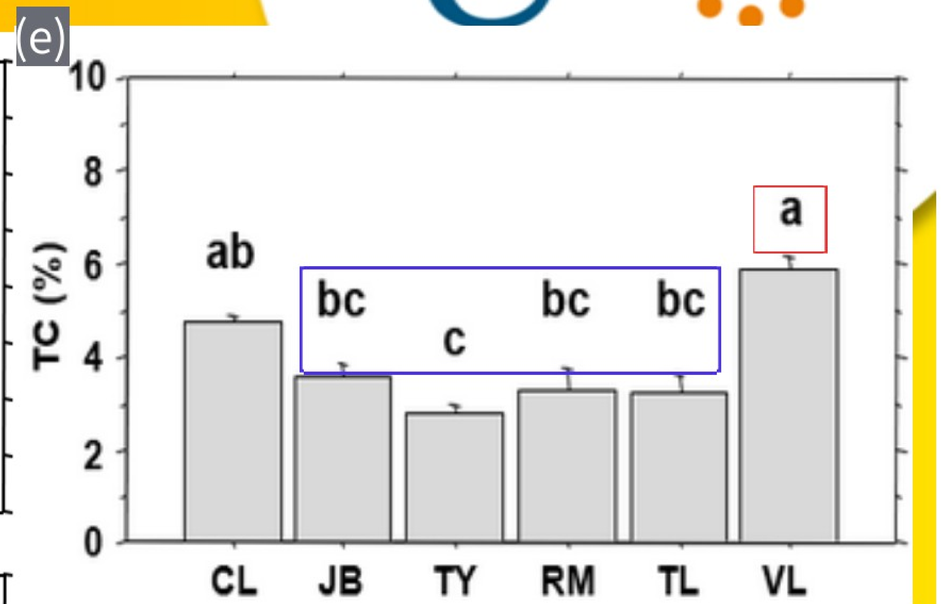
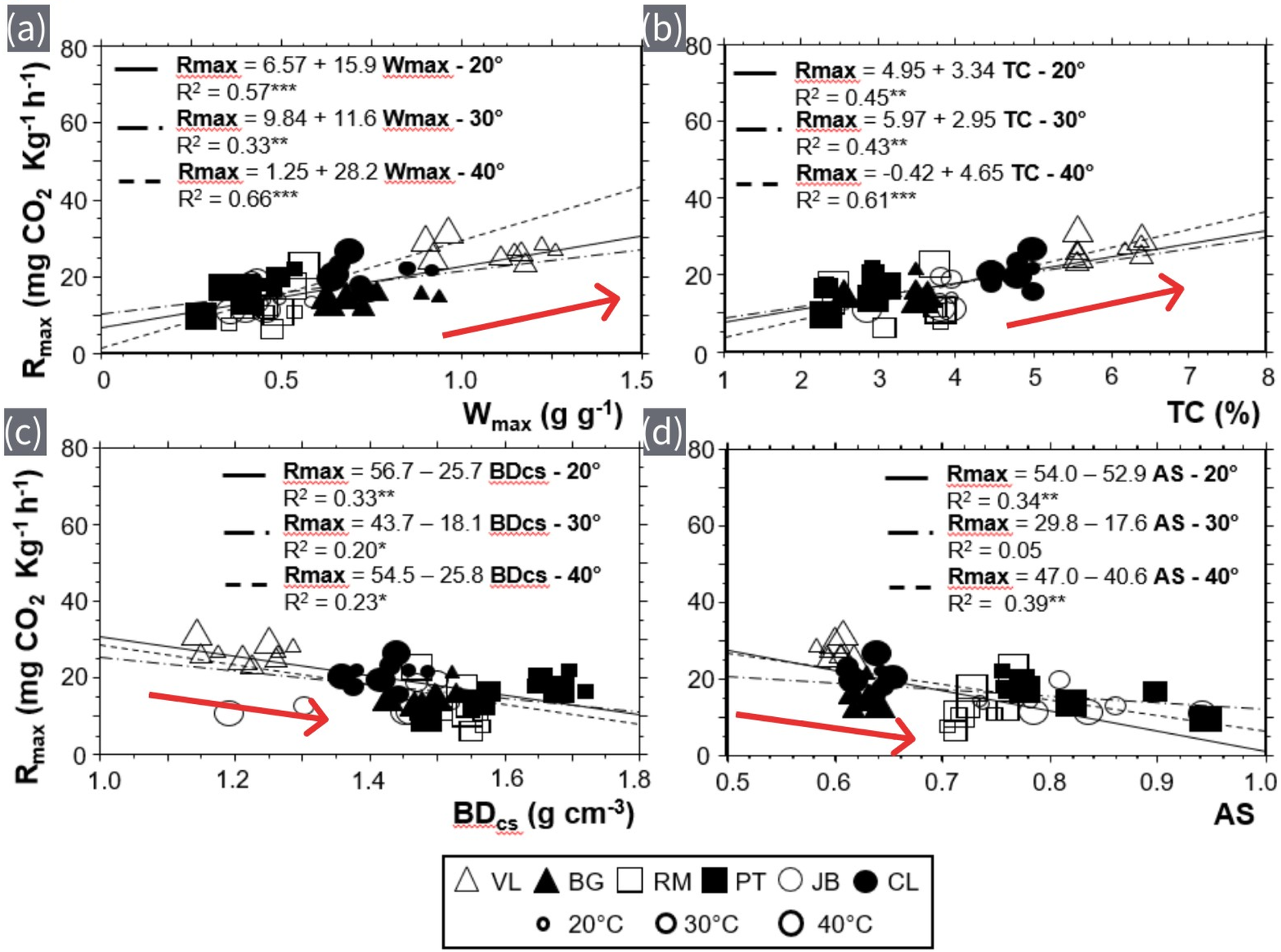



**Rmax =** peak of $CO_2$ emissions from soils
**Wmax =** soil-water retenion at Rmax
**RW =** Rmax / Wmax
**MRTmin =** TC/Rmax = minimal mean retention time of carbon
**TC =** Total soil carbon

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# 5. Interactions

**Soil physical properties and total carbon are able to control the magnitude of the peak of soil $CO_2$ emissions.**

**Rmax** = peak of $CO_2$ emissions from soils
**Wmax** = soil-water retenion at Rmax
**RW** = Rmax / Wmax
**MRTmin** = TC/Rmax = minimal mean retention time of carbon
**TC** = Total soil carbon, **BD** = bulk density,
**AS** = aggregate stability