**OVERVIEW**

Applied simple approach to evaluate habitability of terrestrial planets by assuming different types of planetary atmospheres for current Kepler planetary candidates (also applies to other transit mission and other searches).

Depends on a first approximation on 4 main parameters:
1) incident stellar flux which depends on stellar luminosity, spectral energy distribution and eccentricity of the system,
2) planetary albedo, 3) greenhouse gas concentration, and 4) energy distribution in the planetary atmosphere.

**MAIN POINTS**

Simply estimate if a planet is pot. habitable: 185K < T<sub>eq</sub> < 270K

\[ T_{eq} = T_{star} \left[ \frac{1 - A}{2} \frac{R_{star}}{D} \frac{1}{(1 - e^2)^{1/2}} \right]^{1/4} \]

A=Bond albedo, \( \beta = \) reradiation parameter, e=eccentricity, D=orbital distance, \( T_{eq} = \) planet equilibrium T

Spectroscopy needed to CHARACTERIZE planets
Atmospheric gases (biomarkers) in emission/reflection and transmission for Earths and super-Earths

**THE HABITABLE ZONE**

We focus on the circumstellar HZ, that was defined by Kasting et al. (1993) as an annulus around a star where a planet with an atmosphere and a sufficiently large water content like Earth can host liquid water permanently on a solid surface. This definition of the HZ implies surface habitability because it is defined to allow remote detectability of life as we know it.

**REFERENCES**