

# Raddy Documentation

## **Ad<const N: usize>**

- Generics
  - N: # dimension of **variable** (that requires derivatives).
- Notes
  - Computes on precision f64.

## 1. Constructors

### **1.1. pub fn ad(value: f64) -> Ad<1>**

- Initializes a differentiated scalar.

### **1.2. pub fn vec<const L: usize>(values: &[f64]) -> SVector<Ad<L>, L>**

- Initializes a differentiated vector.
- *Panics* if size mismatch.

### **1.3. pub fn val(value: f64) -> Ad<1>**

- Initializes a constant scalar.

### **1.4. pub fn valvec<const L: usize>(values: &[f64]) -> SVector<Ad<L>, L>**

- Initializes a constant vector.
- *Panics* if size mismatch.

## 2. Supports

- Elementary function (sin, cosh, exp, ln, *etc.*)
  - Does **not** support atan, please use atan2 instead.
- Norms and determinant for matrices.
- Matrix multiplication.
- SVD, although you should not use it (for some numerical problems).