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## Functions with uniformly bounded mean oscillations on dyadic cubes

 **Definition. Functions with uniformly bounded mean oscillations on dyadic cubes**

Let  $f \in L^1_{\text{loc}}(\mathbb{R}^d)$  and

$$\|f\|_{\text{DMO}} := \sup \left\{ \frac{1}{m(Q)} \int_Q \left| f - \frac{1}{m(Q)} \int_Q f \right| \middle| Q \text{ is a dyadic cube in } \mathbb{R}^d \right\}$$

and

$$\text{DMO} := \frac{\{f \in L^1_{\text{loc}}(\mathbb{R}^d) \mid \|f\|_{\text{DMO}} < \infty\}}{\{\text{functions that are constant aeon } \mathbb{R}^d\}}$$

**Proposition:**

$$\text{BMO} \subset \text{DMO}$$

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      - [decom bd](#) Chebyshev's inequality
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      - [density](#) Lebesgue density of measurable sets
      - [DMO](#) Functions with uniformly bounded mean oscillations on dyadic cubes
      - [End int](#) Volterra operator  $\int_{[0,-]}^1 : L_{loc}^1[0, 1] \rightarrow \mathcal{C}[0, 1]$
      - [f](#) Measurable functions on  $\mathbb{R}^n$
      - [f quant](#)  $(\epsilon, n)$ -measurable function
      - [int](#) Integrability and integral of measurable functions on  $\mathbb{R}^n$
      - [int HL](#) Hardy-Littlewood maximal functions of  $L_{loc}^1(\mathbb{R}^n)$
      - [int mean](#) Lebesgue averaging and differentiation
      - [int monotone](#) Integrals of a monotonically converging sequence of functions
      - [int undergraph](#) Lebesgue integral from measure of undergraph
      - [Lorentz](#)  $L^{p,q}$
      - [unit mass](#)  $E([0, 1]) = E(0, 1), E([- \pi, \pi]) = E(S^1)$