Todo list

Fluid Mechanics

A very imprecise set of notes

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On the cover page:
The British Channel Seen from the Dorsetshire Cliffs
John Brett (1831–1902)
Tate

Contents

Chapter 1

Scratches

Definition 1.0.1 (Partition)**.** Let A be a set. A collection of sets $\mathcal{F} \subseteq \mathscr{P}(A)$ is a **partition** of A if distinct members of $\mathcal{F}$ are disjoint and A can be expressed as the union of the sets in $\mathcal{F}$.

1.1 measure function

1.2 measure on semi-rings

measure can be defined on semi-rings. Semi-rings are good because they are semi-open intervals (or rectangles) in $\mathbb{R}$ (or $\mathbb{R}^n$). But measures here are just finite additive.

To get to $\sigma-$additivity (i.e. to go into rings equipped with a measure) you need topology.

1.3 external measure

Covering? Maybe with the partition Infimum of all the possible coverings that one can build External measure is monotonic triangle inequality $|m(A) - m(B)| \leq |m(A \Delta B)|$