Lebesgue decomposition theorem

Canonical name	LebesgueDecompositionTheorem
Date of creation	2013-03-22 13:26:28
Last modified on	2013-03-22 13:26:28
Owner	Koro (127)
Last modified by	Koro (127)
Numerical id	8
Author	Koro (127)
Entry type	Theorem
Classification	msc 28A12

Let μ and ν be two σ-finite signed measures in the measurable space $(\Omega, \mathscr{S})$. There exist two http://planetmath.org/SigmaFiniteσ-finite signed measures ν_0 and ν_1 such that:

1. $\nu = \nu_0 + \nu_1$;

2. $\nu_0 \ll \mu$ (i.e. ν_0 is absolutely continuous with respect to μ;)

3. $\nu_1 \perp \mu$ (i.e. ν_1 and μ are singular.)

These two measures are uniquely determined.