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Haar integrals on topological rings.

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Let R be a locally compact topological ring with identity, and let R^\times be the group of units. Suppose that R^\times is open in R , and let λ be a Haar measure on R . The author constructs a Haar measure μ on R^\times from λ . The construction is elementary and follows the lines of that for R a field [cf. N. Bourbaki, *Éléments de mathématique. Fasc. XXIX. Livre VI: Intégration. Chapitre 7: Mesure de Haar*, p. 33, Actualités Sci. Indust. No. 1306, Hermann, Paris, 1963; [MR0179291](#); Russian translation, *Integration: Vector integration. Haar measure. Convolution and representations*, Izdat. “Nauka”, Moscow, 1970; [MR0274688](#)]. For R the ring of $n \times n$ real matrices, $\int_{R^\times} f(x) d\mu(x) = \int f(x)(\det x)^{-2} dx(x)$ (all f continuous of compact support on R^\times). *Colin C. Graham*