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94720-3840. *Noncommutative T-duality*. Preliminary report.

I will describe the procedure of T-dualization using groupoids. This is a transform which, classically, replaces a gerbe on a torus bundle with a new gerbe on a bundle of dual tori. Not every gerbe on a torus bundle admits a classical T-dual however. Indeed, Mathai Varghese and Jonathan Rosenberg discovered that under certain conditions T-duals exist only as noncommutative spaces. I will show how in such cases the T-dual is a gerbe over a family of dual noncommutative tori and provide some further interpretations (Received August 11, 2008)