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Andrei Rapinchuk* (asr3x@virginia.edu), Department of Mathematics, University of Virginia, P.O. Box 400137, Charlottesville, VA 22904-4137. *Weakly commensurable S -arithmetic subgroups in simple algebraic groups of types B_n and C_n .*

In a joint work with Gopal Prasad (Publ. math. IHES 109(2009), 113-189) we introduced the notion of weak commensurability for Zariski-dense subgroups $\Gamma_i \subset G_i(F)$ ($i = 1, 2$) where G_1 and G_2 are almost simple algebraic groups defined over a field F of characteristic zero. We have been able to determine when two S -arithmetic Zariski-dense subgroups Γ_1 and Γ_2 are weakly commensurable if G_1 and G_2 are of the *same* type. However, weakly commensurable S -arithmetic subgroups can exist in groups of different types, viz., when G_1 is of type B_n and G_2 is of type C_n for some $n \geq 3$. I will report on a joint work with Skip Garibaldi in which we have pinned down all situations where this phenomenon happens. This result has some geometric applications. (Received August 13, 2011)