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# Critical posets and posets with nonnegative Tits form

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A poset $S$ is called $P$-critical (resp. $NP$-critical or $P$-supercritical) if the Tits form of any proper subset of it is positive (resp. nonnegative), but the Tits form of $S$ itself does not possess this property.

All $P$-critical posets are described by the authors in [1]; there are 75 such posets, up to duality. In the same paper the authors also describe all finite posets with positive Tits form; we have here three infinite series of such posets and 108 non-series posets (up to duality). In [2] the authors describe all $P$-supercritical posets; there are 115 such posets (up to duality).

We continue study P-critical and $P$-supercritical posets, and posets with positive and nonnegative Tits form, paying special attention to the $\mathbb{Z}$-equivalence of the quadratic Tits forms among themselves and with the quadratic Tits forms of quivers.

## References

[1] V. M. Bondarenko, M. V. Stepochkina, (Min, max)-equivalency of partially ordered sets and Tits quadratic forms// Analysis and Algebra Problems, Inst. Mat. NAS Ukraine 2(3), 2005, pp. 3–46 (In Russian).

[2] V. M. Bondarenko, M. V. Stepochkina, Description of posets cripical with respect to the nonnegativity of the quadratic Tits form // Ukrain. Mat. Zh. 61,no 5, 2009, pp. 611–624.

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