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From coherent to finiteness spaces. (English summary)

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Finiteness spaces provide a model of linear logic that rests on a simple notion of set-theoretic closure. These spaces present similarities to both coherent spaces (coherence spaces) and hypercoherence spaces.

The paper tackles the question of the formal relationship between coherent spaces and finiteness spaces. A smooth embedding of coherent spaces in finiteness spaces is proved to enjoy a key property (about suitable notions of orthogonality) by using the infinite Ramsey Theorem. Such an embedding is extended to a well-behaving faithful functor from coherent spaces to finiteness spaces. The paper concludes with some results involving the cardinality of collections of finiteness spaces defined on the same web (set of support). *Luca Paolini*

References

1. Antonio Bucciarelli and Thomas Ehrhard, *On phase semantics and denotational semantics: the exponentials*, *Annals of Pure and Applied Logic* **109** (2001), no. 3, 205–241. [MR1832050](#)
2. Thomas Ehrhard, *Finiteness spaces*, *Mathematical Structures in Computer Science* (2005), 615–646. [MR2158033](#)
3. Thomas Ehrhard and Laurent Regnier, *The differential lambda-calculus*, *Theoretical Computer Science* **309** (2003), no. 1–3, 1–41. [MR2016523](#)
4. Jean-Yves Girard, *Linear logic*, *Theoretical Computer Science* **50** (1987), 1–102. [MR0899269](#)
5. Frank Plumpton Ramsey, *On a problem of formal logic*, *Proceedings of The London Mathematical Society* **s2-30** (1930), 264–286. [MR1576401](#)
6. Lionel Vaux, *The algebraic lambda calculus*, *Mathematical Structures in Computer Science* **19** (2009), no. 5, 1029–1059. [MR2545510](#)

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.