Turing Categories and Computability

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Introduction

A Turing category is a category C equipped with:

- cartesian products — to pair (the codes of) data and programs,
- a notion of partiality — to represent programs (morphisms) which do not necessarily halt,
- and a Turing object A — to represent the "codes" of all programs.

Turing categories provide an abstract framework for computability: a "category with partiality" equipped with a "universal computer", whose programs and codes thereof constitute the objects of interest. [1]

References

[1] Jacques Alev and François Dumas, *Invariants du corps de Weyl sous l'action de groupes finis*, Comm. Algebra **25** (1997), no. 5, 1655–1672. MR1444026