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said to be reducible to a ceer S, if there is a computable function f such that, for all x and y, $xRy \iff f(x)Sf(y)$. We construct an infinite ω-chain of non-equivalent weakly precomplete ceers under this reduction.

[1] Serikzhan Badaev and Andrea Sorbi, *Weakly precomplete computably enumerable equivalence relations*, ***Mathematical Logic Quarterly***, vol. 62 (2016), no. 1, pp. 111–127.

▸ FARSHAD BADIE & HANS GÖTZSCHE, *Towards Logical Analysis of Occurrence Values in Truth-Functional Independent Occurrence Logic.*
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The human beings never really understood how truth could be recognised as the centrepiece of philosophy. The idea of truth vs. falsity is based on the assumption that the truth-value of statements about things beyond actual settings can, indisputably, be determined ('false' statements about settings are just counterfactuals).

In this discussion, we will rely on our alternative kind of logic: *Occurrence Logic* (Occ Log), which is not based on truth functionality, see [1]. The Occ Log z °> y expression denotes the fact that 'y occurs in case and only in case z occurs'. Note that 'z °> y' does not by itself express any kind of truth-value semantics. We will see that the *Occurrences* as the main building blocks of our approach are independent from truth-values, but they are strongly dependent on the occurrence values. The fact that 'y would only occur [and would only have an occurrence value] in case z occurs [and has an occurrence value]', has been represented by Occ Log expression z °> y. We shall stress that what is in logic often called 'states of affairs' (including 'events') of the real world could be called *Local Universes* that are made of Entities and Properties. Focusing on the events z and y we can justifiably say that "in case, and only in case, the local universe of z differs from the local universe of y regarding at least one but not all Entities and Properties, one of them can, potentially, be said to be a change of the other".

[1] Götzsche, Hans, *Deviational Syntactic Structures. London / New Delhi / New York / Sydney: Bloomsbury Academic, 2013.*

▸ BEKTUR BAIZHANOV, OLZHAS UMBETBAYEV AND TATYANA ZAMBARNAYA, *The properties of linear orders defined on the classes of convex equivalence of 1-formulas.*
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In the report we consider small countable theories with an $\emptyset$-definable binary relation of linear order. Let A be a finite subset of a countable saturated model N, and $H(x)$ and $\Theta(x)$ be A-definable 1-formulas such that $H(N) \subset \Theta(N)$.

Define $E_{H,\Theta}(x,y) := H(x) \wedge H(y) \wedge (x < y \rightarrow \forall z((x < z < y \wedge \Theta(z)) \rightarrow H(z))) \wedge (y < x \rightarrow \forall z((y < z < x \wedge \Theta(z)) \rightarrow H(z))$.

$E_{H,\Theta}(x,y)$ is an A-definable relation of equivalence on $H(N)$ such that any $E_{H,\Theta}$-class is convex in $\Theta(N)$.

We say that an ordered theory T has the *property of finiteness of discrete chains convex equivalences* (*FDCCE*) if for every two one-formulas $H(x)$ and $\Theta(x)$ such that $H(N) \subset \Theta(N)$, for any k $(1 < k < \omega)$ every discrete chain of convex $E_{H,\Theta}$-classes is finite.

We say that the set of A-definable one-formulas $C \subset F_1(A)$ is a $BH-algebra$ if it is closed under the following logical operations: $\wedge$, $\neg$, $\vee$, $\triangleleft_k^i$ $(0 < i < k,\ 1 < k < \omega)$.

Theorem 1. *Let T be a small ordered theory with FDCCE, A be a finite subset of a countable saturated model N of the theory T. Then for every finite set of A-definable one-formulas $\{\phi_1(x), \ldots, \phi_n(x)\}$, $n < \omega$ the BH-algebra generated by this set is finite.*

An ordered theory T is a theory of a *pure order* if it is in a language $L = \{=, <\}$.

Theorem 2. *Let T be a small theory of a pure order. Then T is ω-categorical if and only if it has FDCCE.*

Corollary 3. *Let T be a non-ω-categorical small theory of a pure order. Then there is $\emptyset$-definable 1-formula $\phi(x)$ such that for some elements $\alpha, \beta \in \phi(N)$ $(\alpha < \beta)$, $(\alpha, \beta) \cap \phi(N)$ is an infinite discrete chain.*

Corollary 4. *Let T be a countable complete ordered theory in a language L and $T_0 \subset T$ be a complete theory in a language $L_0 := \{=, <\} \subset L$. If T_0 is non-ω-categorical then $I(T, \omega) = 2^\omega$.*

[1] M. Rubin, *Theories of linear order*, **Israel Journal of Mathematics**, vol. 17 (1974), pp. 392–443.

[2] S. Shelah, *End extensions and numbers of countable models*, **Journal of Symbolic Logic**, vol. 43 (1978), pp. 550–562.

▸ NEIL BARTON, *(Sub)systems of second-order set theory*.
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Much of set-theoretic practice concerns questions that are, at first blush, second-order in content. The study of the construction of *inner models* (such as Woodin's Ultimate-L conjecture and the construction of the Steel Core Model), the investigation of *embedding principles* (for example large cardinals and Kunen's Theorem