

- A.R. YESHKEYEV, I.O. TUNGUSHBAYEVA, G.YE. ZHUMABEKOVA, *The central type of a semantic pair.*

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We consider a hereditary [1] Jonsson theory  $T$  that is  $J$ - $\lambda$ -stable [2]. Let  $C_T$  be a semantic model of  $T$ , and  $N, M$  be existentially closed submodels of  $C_T$ . A pair  $(N, M)$  is called existentially closed pair, if  $M$  is an existentially closed submodel of  $N$ . An existentially closed pair  $(C_T, M)$  is a semantic pair, if the following conditions hold: 1)  $M$  is  $|T|_{\exists}^+$ -saturated (it means that it is  $|T|^+$ -saturated restricted up to existential types); 2) for any tuple  $\bar{a} \in C$  each its  $\exists$ -type in sense of  $T$  over  $M \cup \{\bar{a}\}$  is satisfiable in  $C$ . We define the theory  $T'$  as follows:  $T' = T \cup \{P, \subseteq\}$ , where  $\{P, \subseteq\}$  is an infinite set of existential sentences with constants from the existentially closed submodel in the considered existentially closed pair. Let  $T$  be a Jonsson  $L$ -theory and  $f(\bar{x}, \bar{y})$  be an  $\exists$ -formula of  $L$ . If for any arbitrary large  $n$  there exists  $\bar{a}_1, \dots, \bar{a}_n$  in some existentially closed model of  $T$ , and  $\bar{a}_1, \dots, \bar{a}_n$  satisfies  $\neg(\exists \bar{x}) \wedge_{k \leq n} f(\bar{x}, \bar{a}_k)$ , and for any  $l \leq n$   $\neg(\exists \bar{x}) \wedge_{k \leq n, k \neq l} f(\bar{x}, \bar{a}_k)$ , then  $f(\bar{x}, \bar{y})$  is said to have e.f.c.p. (existentially finite covered property). In the framework of the study of Jonsson theories, which are generally incomplete, and in some expanded language with new unary predicate and constant symbols, we refine in such generalization the earlier result obtained on beautiful pairs for complete theories from [3] (Theorem 6).

**THEOREM 1.** *Let  $T$  be a hereditary Jonsson  $\exists$ -complete theory. Then the following conditions are equivalent:*

- 1)  $T$  does not have e.f.c.p.;
- 2) two tuples  $\bar{a}$  and  $\bar{b}$  from the models of  $T'$  have the same type iff their central types [1] in sense of  $T$  over  $M$  are equivalent by fundamental order;
- 3) two tuples  $\bar{a}$  and  $\bar{b}$  from the models of  $T'$  and that are in  $M$  have the same type in sense of  $T'$  iff their central types are equal in sense of  $T$ .

[1] AIBAT YESHKEYEV, MAIRA KASSYMETOVA, OLGA ULBRIKHT, *Independence and simplicity in Jonsson theories in abstract geometry*, **Siberian Electronic Mathematical Reports**, vol. 18 (2021), no. 1, pp. 433–455.

[2] AIBAT YESHKEYEV, *On Jonsson stability and some of its generalizations*, **Journal of Mathematical Sciences**, vol. 18 (2021), no. 1, pp. 433–455.

[3] BRUNO POIZAT, *Paires de structures stables*, **The Journal of Symbolic Logic**, vol. 48 (1983), no. 2, pp. 239–249.