

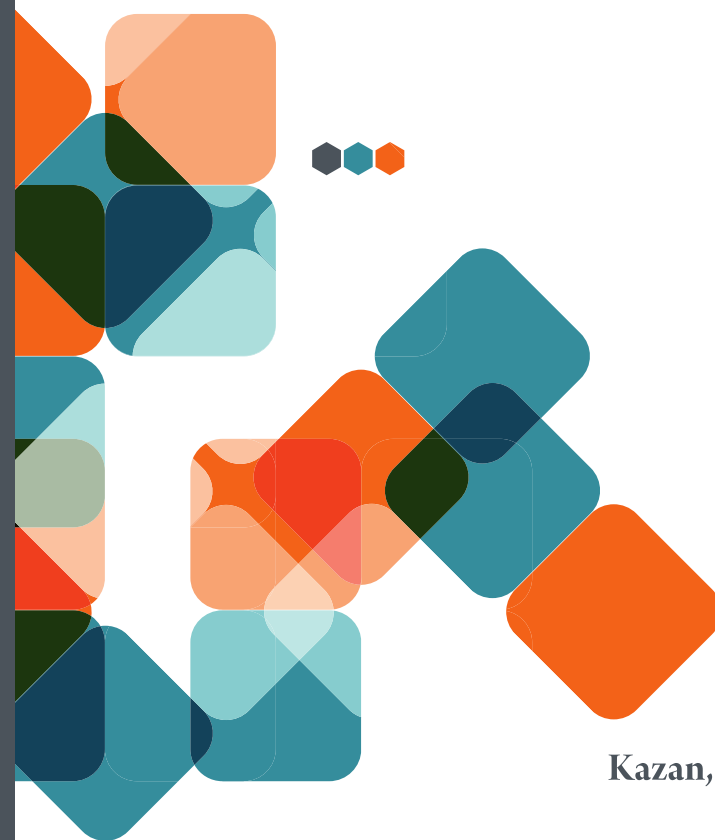
PROCEEDINGS
OF THE INTERNATIONAL CONFERENCE
“TURKIC LANGUAGES PROCESSING”

TurkLang 2015

September 17-19, 2015, Kazan, Tatarstan, Russia

TurkLang • 2015

Tatarstan Academy of Sciences



Kazan, 2015

TOWARDS A FREE/OPEN-SOURCE UNIVERSAL-DEPENDENCY TREEBANK FOR KAZAKH <i>Francis M. Tyers, Jonathan Washington</i>	276
--	-----

SECTION 4. UNITURK SEMINAR

MORPHOLOGICAL DISAMBIGUATION IN CORPUS OF TATAR LANGUAGE <i>Ramil Gataullin, Rinat Gilmullin</i>	290
--	-----

MORPHOLOGICAL STANDARD NKCHYA: INFORMATION ON MORPHOLOGICAL CHARACTERS, ARCHITECTURE GRAMMAR DICTIONARY <i>Aleksey Gubanov</i> ..	297
---	-----

SOME POSSIBILITIES OF SEMANTIC AND ETYMOLOGICAL TAGGING OF CORPORA FOR TURKIC LANGUAGES (РАССТАНОВКА СЕМАНТИЧЕСКИХ ТЭГОВ В ЭЛЕКТРОННОМ ХАКАССКО-РУССКОМ СЛОВАРЕ) <i>Anna Dybo, Alexandra Sheymovich, Sergei Krylov</i>	304
--	-----

MORPHOLOGICAL MARKUP SYSTEM FOR THE NATIONAL BODY OF THE CHUVASH LANGUAGE <i>Pavel Zheltov</i>	328
--	-----

MORPHOLOGICAL TAGGING OF CRIMEAN TATAR ELECTRONIC CORPUS <i>Lenara Kubedinova, Ayrat Gatiatullin</i>	331
--	-----

SYNTACTIC ANNOTATION OF KAZAKH: FOLLOWING THE UNIVERSAL DEPENDENCIES GUIDELINES. A REPORT <i>Aibek Makazhanov, Aitolkyn Sultangazina, Olzhas Makhambetov, Zhandos Yessenbayev</i>	338
---	-----

DEVELOPMENT OF SEMANTIC MARKUP THE CORPUS OF TUVAN LANGUAGE <i>Baylak Oorzhak, Arzhaana Khertek</i>	351
---	-----

LINGUISTIC ANNOTATION OF GRAMMATICAL CATEGORIES OF SAKHA LANGUAGE (ON EXAMPLE OF NOUN) <i>Gavril Torotoev, Alina Torotoeva</i> ..	363
---	-----

SECTION 5. SEMANTICS AND GRAMMAR IN TURKIC LANGUAGES

PREDICATE-ARGUMENT RELATIONS IN KOREAN SENTENCES WITH PARTICIPLE PHRASES <i>Evgeniya Brechalova</i>	374
---	-----

THE LOCATIVE ATTRIBUTIVE OF THE TATAR LANGUAGE: THE STRUCTURAL AND SEMANTICS <i>Alfiya Galieva</i>	386
--	-----

STATISTIC DISTRIBUTION OF SOME GRAMMATICAL CATEGORIES OF THE TATAR LANGUAGE OVER CORPUS DATA <i>Alfiya Galieva, Olga Nevzorova, Dzhavdet Suleymanov</i>	396
---	-----

MODELING OF TENSE SYSTEM IN AGGLUTINATIVE LANGUAGES WITH SEMANTIC SITUATIONS <i>Zhandos Zhumanov</i>	409
--	-----

COMPUTER –MATHEMATICAL MODELING OF NATIONAL SPECIFICITY OF SPATIAL MODELS IN KYRGYZ LANGUAGE <i>Sonunbubu Karabaeva, Polina Dolmatova, Aisuluu Imanalieva</i>	416
---	-----

HOW MANY MODALITIES OF CASE ASSIGNMENT ARE THERE IN TATAR? <i>Ekaterina Lyutikova, Dilya Ibatullina</i>	423
---	-----

MODELING OF TENSE SYSTEM IN AGGLUTINATIVE LANGUAGES WITH SEMANTIC SITUATIONS

Zhandos Zhumanov

al-Farabi Kazakh National University,
71 al-Farabi Ave., Almaty 050040, Kazakhstan
z.zhake@gmail.com

The paper provides a formal description of verbs tenses in agglutinative languages using semantic situations and regular expressions on example of Kazakh language. We describe features of Kazakh language's tense system, semantic situations and their representation in the form of regular expressions. Kazakh language's tense system is simulated with semantic situations. A practical use example of proposed solution is provided. There are practical results.

1. Introduction

Tense category is one of the most important grammatical categories of natural languages. In various languages, this category has a different grammatical representation, but its purpose is always the same, that is to show how a text relates to a timeline, adopted in the language. Except for the obvious way to reference time (past, present, future), there are several expressions of time, which in some languages are not obvious. Formal description of tense category is complicated by the fact that the same time moment can be expressed using different grammatical structures. This results in the fact that in natural language processing it can be difficult to analyze time expressions.

To solve this problem, we can use the fact that expression of time in natural languages consists of two components: grammatical and semantic. And the second component, in our opinion, is more important. For example, in machine translation very often tense of the same sentence in different languages may not match.

2. Tense category in linguistics

According to (Fabricius-Hansen, 2006), in grammar tense is a category that determines the position of the action on the timeline. Tense category uses an indication of time tied to some moment. Referencing time to the present moment is sometimes called absolute time, referencing to the moment other than current is called relative time. The first case