этих параметров на качество машинной атрибуции. Их влияние оказалось статистически значимым и линейно независимым от влияний других используемых параметров. Поэтому их включение в оптимальный набор должно существенно повысить качество классификации.

Для проверки этого утверждения был создан подкорпус русскоязычных текстов, для которого были рассчитаны все использованные ранее параметры и к ним добавлены информационные параметры хаоса и порядка. На основе этого подкорпуса были проведены исследования оптимального набора классификации методами дискриминантного и факторного анализа.

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RECURRENT NETWORK CLASSIFIER FOR ULTRAFast SKYRMION DYNAMICS

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By using the supervised learning we trained a recurrent neural network to recognize and classify ultrafast magnetization processes realized in two-dimensional nanosystems with Dzyaloshinskii-Moriya interaction.

Understanding of relaxation processes in magnetic materials due to the ultrafast pulses realized with different experimental techniques plays a crucial role for creating next-generation magnetic storage and spintronic technologies. In the static case the magnetic state recognition and classification problems can be effectively solved neither with standard methods of machine learning such as support vector machine, k-means and others or with neural network approach [1]. In our study we follow the idea "classify a movie rather than snapshot" [2] and propose a recurrent neural network classifier for ultrafast skyrmion processes of picosecond scale in two-dimensional materials (see at Fig. 1). The magnetic configurations calculated with

LLG [3] approach at different times of the relaxation process are used as input for the recurrent neural network. Having trained the recurrent neural network, we have constructed a phase diagram of processes realized in the ferromagnetic material depending on external parameters (damping constant and magnetic pulse width).

Fig. 1. Illustration of idea of the ultrafast skyrmionic process recognition. Magnetization dynamics is used frame by frame as an input for recurrent neural network providing the process classification.

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