

дятся работы по определению параметров четырехполюсников индуктивной связи в системе автоматической локомотивной сигнализации с целью дальнейшего анализа помехоустойчивости

ее функционирования, разработки технических и организационных решений, направленных на снижение числа сбоев в ее работе, и проведения комплекса необходимых измерений. ■

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Список литературы

1. Шаманов В.И. Процесс формирования асимметрии тягового тока в рельсовых линиях // Электротехника. — 2014. — № 8.
2. Оценка энергии внешних электромагнитных помех частотно-регулируемых асинхронных двигателей / Ю.Б. Казаков, Е.А. Шумилов, А.В. Тамьяров, А.Н. Морозов // Вестник ИГЭУ. — 2017. — № 4. DOI: 10.17588/2072-2672.2017.4.037-043.
3. Кравцов Ю.А. Электромагнитная совместимость рельсовых цепей и электроподвижного состава с асинхронным тяговым приводом // Автоматика на транспорте. — 2015. — Т. 1. — № 1.

Electromagnetic Compatibility of Locomotive Signaling Devices and Rolling Stock

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electromagnetic compatibility,
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We have analyzed the issues of electromagnetic compatibility of automatic locomotive signaling devices and promising rolling stock, as well as sources of interference affecting the operation of the automatic locomotive alarm receiver. We propose to consider the interference scheme at the input of an automatic locomotive alarm and the equivalent circuit of inductive coupling paths for the analysis of interference from an asynchronous traction electric motor. We believe that the use of these circuits clearly shows useful and interfering inductive coupling arising between the elements of the locomotive signaling system, path and power equipment of the locomotive. By analyzing each inductive coupling this allows developing technical solutions aimed at reducing the degree of interference influence on the automatic locomotive signaling functioning. Further consideration of this issue requires determining the parameters of the inductive coupling four-poles.

References

1. Shamanov V.I. Protseess formirovaniya asimmetrii tyagovogo toka v rel'sovykh liniyakh [The process of traction current asymmetry formation in rail lines], *Elektrotehnika*, 2014, no. 8, pp. 34–38.
2. Kazakov Yu.B., Shumilov E.A., Tam'yarov A.V., Morozov A.N. Otsenka energii vneshnikh elektromagnitnykh pomekh chastotno-reguliruemyykh asinkhronnykh dvigateley [Frequency-controlled asynchronous motors external electromagnetic interference energy evaluation], *Vestnik IGEEU*, 2017, no. 4, pp. 37–43. DOI: 10.17588/2072-2672.2017.4.037-043.
3. Kravtsov Yu.A. Elektromagnitnaya sovmestimost' rel'sovykh tsepey i elektropodvizhnogo sostava s asinkhronnym tyagovym privodom [Electromagnetic compatibility of rail circuits and electric rolling stock with an asynchronous traction drive], *Avtomatika na transporte*, 2015, v. 1, no. 1, pp. 7–27.