Electromagnetic gyrokinetic simulation of turbulent transport in high ion temperature discharge of Large Helical Device\textsuperscript{1} AKIHIRO ISHIZAWA, National Institute for Fusion Science, TOMOHIKO WATANABE, Nagoya University, HIDEO SUGAMA, National Institute for Fusion Science, SHINYA MAEYAMA, Japan Atomic Energy Agency, MASANORI NUNAMI, NORIYOSHI NAKAJIMA, National Institute for Fusion Science — Turbulent transport in a high ion temperature discharge of Large Helical Device (LHD) is investigated by means of electromagnetic gyrokinetic simulations including kinetic electrons. A new electromagnetic gyrokinetic simulation code GKV+ enables us to examine electron heat and particle fluxes as well as ion heat flux in finite beta heliotron/stellarator plasmas \cite{1}. This problem has not been previously explored because of numerical difficulties associated with complex three-dimensional magnetic structures as well as multiple spatio-temporal scales related to electromagnetic ion and electron dynamics. The turbulent fluxes, which are evaluated through a nonlinear simulation carried out in the K-super computer system, will be reported.

\cite{1} A. Ishizawa, et.al., Nuclear Fusion 53, 053007 (2013).

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