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Soft supersymmetry breaking terms from A4 lepton flavor symmetry

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Please give a brief summary of your poster

Recent experiments of the neutrino oscillation go into the new phase of precise determination of mixing angles and mass squared differences. Those indicate the tri-bimaximal mixing for three flavors in the lepton sector. Indeed, various types of models leading to the tri-bimaximal mixing have been proposed, e.g. by assuming several types of non-Abelian flavor symmetries.
One of natural models realizing the tri-bimaximal mixing has been proposed based on the non-Abelian finite group A4. On the other hand, the supersymmetric extension of the standard model is one of interesting candidates for physics beyond the weak scale. Within the framework of supersymmetric models, flavor symmetries constrain not only quark and lepton mass matrices, but also mass matrices of their superpartners, i.e., squarks and sleptons. That is, flavor symmetries realizing realistic quark/lepton mass matrices would lead to specific patterns of squark and slepton
mass matrices as their predictions, which could be tested in future experiments.

We study the supersymmetric model with the A4 lepton flavor symmetry, in particular soft supersymmetry breaking terms, which are predicted from the A4 lepton flavor symmetry. We evaluate soft slepton masses and A-terms within the framework of supergravity theory. Constraints due to experiments of flavor changing neutral current processes are examined.

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