Chunxiao Liu   Sun, Oct 6, 2024, 9:01 PM   ☆   ↩

to Bill ▾

Dear Bill,

I hope you are doing well!

I'd like to share this preprint that my collaborator Weicheng Ye and I just completed, on group cohomology of crystallographic groups and its physical applications:

https://arxiv.org/abs/2410.03607

We obtained the mod-2 cohomology rings for all (but one) 230 space groups, and this allowed us to make general statements about space groups and the lattices symmetric under them.

In many ways, this work traces its roots back to our several afternoon-long discussions at your office in South Hall, UCSB, on the relation between "projective symmetry group" and mod-2 cohomology, the meaning of cup products, the use of LHS spectral sequences... I wanted to take this moment to thank you once again. Bill, your guidance has led me down a research path filled with enjoyment and fruitful discoveries. I hope our connection and friendship will continue for many years to come!

Sincerely,
Chunxiao

P.S. Our next step is to use equivariant cohomology to reproduce the results we have now -- new physics there!

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