

SHUNYA ADACHI

Chiba University, JAPAN

Email: sadachi@math.s.chiba-u.ac.jp

Unitary monodromies of second order linear ordinary differential equations

In this talk, I will discuss about the unitarity of monodromy representations of second order Fuchsian differential equations (or Fuchsian systems of rank two) of SL type.

To study the unitarity of monodromies, it is natural and useful to consider the character variety, which is a moduli space of monodromy representations. In the talk, after introducing the notion of the character variety, I will give a constructive characterization of unitary monodromies in terms of the character variety. Then, the signatures of unitary monodromies can be classified.

If time permits, I will discuss my ongoing work related to the case when the equation has irregular singular points.

REFERENCES

- [1] S. Adachi, Monodromy invariant Hermitian forms for second order Fuchsian differential equations with four singularities, *Opusc. Math.*, **42** (2022), no. 3, 361–391.
- [2] S. Adachi, Unitary monodromies for rank two Fuchsian systems with $(n + 1)$ singularities, arXiv:2210.14729, *submitted*.