

computational aspects of modular pdf

In this chapter we will discuss several aspects of the practical side of computing with modular forms and Galois representations. We start by discussing computations with modular forms and from there work toward the computation of polynomials that give the Galois representations associated with modular forms.

Computational Aspects of Modular Forms and Galois

abstract{ We investigate computational problems related to modular parametrizations of elliptic curves defined over \mathbb{Q} . We develop algorithms to compute the Mazur Swinnerton-Dyer critical subgroup of elliptic curves, and verify that for all elliptic curves of rank two and conductor less than a thousand, the critical subgroup is torsion.

Computational aspects of modular parametrizations of

Abstract: This is a book about computational aspects of modular forms and the Galois representations attached to them. The main result is the following: Galois representations over finite fields attached to modular forms of level one can, in almost all cases, be computed in polynomial time in the weight and the size of the finite field.

[math/0605244] Computational aspects of modular forms and

bookcourant January 8, 2011 Computational Aspects of Modular Forms and Galois Representations How One Can Compute in Polynomial Time the Value of Ramanujan's Tau at a Prime

Computational Aspects of Modular Forms and Galois

Computational aspects of modular forms and Galois representations Authors: Bas Edixhoven, Jean-Marc Couveignes, Robin de Jong, Franz Merkl, Johan Bosman

Computational aspects of modular forms and Galois

Computational Aspects of the Preference Cores of Supermodular Two-Scenario Cooperative Games Daisuke Hatano¹ and Yuichi Yoshida² ¹ RIKEN Center for Advanced Intelligence Project ² National Institute of Informatics daisuke.hatano@riken.jp, yyoshida@nii.ac.jp

Computational Aspects of the Preference Cores of

i Abstract In this thesis I investigate certain computational aspects of modular forms and elliptic curves. The main computational problem in the theory of Modular Forms is the com-

Computational Aspects of Modular Forms and Elliptic Curves

notably, modular forms are an essential ingredient in Andrew Wiles's proof of Fermat's last theorem. This thesis consists of two parts: the first part concerns the distribution of the coefficients of a given classical eigenform; the second part studies computational aspects of the adelic q -expansion of Hilbert modular forms of weight 1.

Computational Aspects of Classical and Hilbert Modular Forms

Elliptic curves comprise a large, and important class of such equations. Throughout the history ... The ultimate motivation for much of the study of Number Theory is the solution of Diophantine Equations -- finding integer solutions to systems of equations.

Computational aspects of elliptic curves and modular forms

The standard method for computing modular polynomials consists of computing the Fourier expansion of the modular j -function and solving a linear system of equations to obtain the integral coefficients ...

(PDF) Computational Aspects of Modular Forms and Elliptic

PDF | This is a book about computational aspects of modular forms and the Galois representations attached to them.

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Computational Aspects of Modular Forms and Galois

Modular forms are tremendously important in various areas of mathematics, from number theory and algebraic geometry to combinatorics and lattices. Their Fourier coefficients, with Ramanujan's tau-function as a typical example, have deep arithmetic significance.

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Computational Aspects of Modular Forms and Galois

Computational aspects of modular forms and Galois representations : how one can compute in polynomial time the value of Ramanujan's tau at a prime. [Jean-Marc Couveignes; B Edixhoven:] -- "Modular forms are tremendously important in various areas of mathematics, from number theory and algebraic geometry to combinatorics and lattices.

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