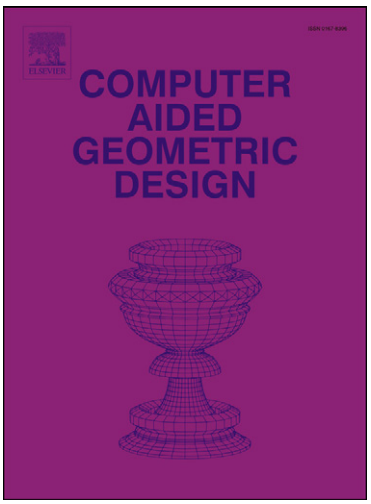
Accepted Manuscript



Asymptotic behavior of an implicit algebraic plane curve

Angel Blasco, Sonia Pérez-Díaz

PII: S0167-8396(14)00046-6
DOI: 10.1016/j.cagd.2014.04.002
Reference: COMAID 1422

To appear in: *Computer Aided Geometric Design*

Please cite this article in press as: Blasco, A., Pérez-Díaz, S. Asymptotic behavior of an implicit algebraic plane curve. *Computer Aided Geometric Design* (2014), http://dx.doi.org/10.1016/j.cagd.2014.04.002

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Asymptotic Behavior of an Implicit Algebraic Plane Curve[☆]

Angel Blasco and Sonia Pérez-Díaz
Dpto. de Física y Matemáticas
Universidad de Alcalá
E-28871 Madrid, Spain
angel.blasco@uah.es, sonia.perez@uah.es

Abstract

In this paper, we introduce the notion of infinity branches as well as approaching curves. We present some properties which allow us to obtain an algorithm that compares the behavior of two implicitly defined algebraic plane curves at the infinity. As an important result, we prove that if two plane algebraic curves have the same asymptotic behavior, the Hausdorff distance between them is finite.

Keywords: Implicit Algebraic Plane Curve, Infinity Branches, Convergent Branches, Asymptotic Behavior, Approaching Curves
2000 MSC: 14H50, 14Q05, 68W30

1. Introduction

Unirational algebraic varieties, play an important role in the frame of practical applications (see Hoffmann et al. (1997), and Hoschek and Lasser (1993)). In particular, many authors have studied different problems related to plane algebraic curves that are implicitly defined (see e.g. Sendra et al. (2007), and Walker (1950)). In this paper, we deal with the notion of infinity branches which, intuitively speaking, reflect the status of a curve at the points with sufficiently large coordinates. In fact, an infinity branch is associated to

[☆]The author S. Pérez-Díaz is member of the Research Group ASYNACS (Ref. CCEE2011/R34)

Download English Version:

https://daneshyari.com/en/article/6876701

Download Persian Version:

https://daneshyari.com/article/6876701

Daneshyari.com