Appendix: *Mathematica* script

As sketched in Section 3.3: “The Elimination lemma”, in order to prove that the system $F_3 =...= F_6 = 0$ has a unique solution it is enough to compute the resultant $\mathrm{Res}^3{}_6$ and show that it is not identically zero as a function on (λ,α).

```
<< Notation`

Symbolize[ p̃ ]

Symbolize[ η̃ ]

Symbolize[ S̃ ]

Symbolize[ c̃ ]

Symbolize[ q̃ ]

Symbolize[ λ1 ]

Symbolize[ λ2 ]

Symbolize[ α0 ]

Symbolize[ α1 ]

Symbolize[ α2 ]
```

We first introduce the basic objects defining the normal forms for foliations F and $\tilde{F}$ (cf. the begining of Section 4: “Definitions and normalizations”).

```
r := w^2 - 1
s := λ1 * (w - 1) + λ2 * (w + 1)
σ := λ1 + λ2
p := α1 * (w - 1) + α2 (w + 1)
p̃ :=  β1 * (w - 1) + β2 * (w + 1)
η := α1 + α2
η̃ := β1 + β2
```

We now proceed to define the polynomials $S_d(w)$ and the coefficients c_d and their tilde-analogs which are defined in Definition 4.1 and Proposition 4.2. Explicit formulas for these objects appear at the begining of Section 7: “Proof of Elimination lemma”.

```
S2 := r
S̃2 := r
c2 := α0 * (1 - σ)
c̃2 := β0 * (1 - σ)

S3 := -s * p * r + (η - α0 * σ) * r^2
S̃3 := -s * p̃ * r + (η̃ - β0 * σ) * r^2
c3 := -α0^2 * σ * (1 - σ)
c̃3 := -β0^2 * σ * (1 - σ)

S4 := -p * r^2 + α0 * (2 * σ - 1) * s * p * r^2 + α0 * σ * (α0 * σ - η) * r^3
S̃4 := -p̃ * r^2 + β0 * (2 * σ - 1) * s * p̃ * r^2 + β0 * σ * (β0 * σ - η̃) * r^3
c4 := α0^3 * σ^2 * (1 - σ)
c̃4 := β0^3 * σ^2 * (1 - σ)
```