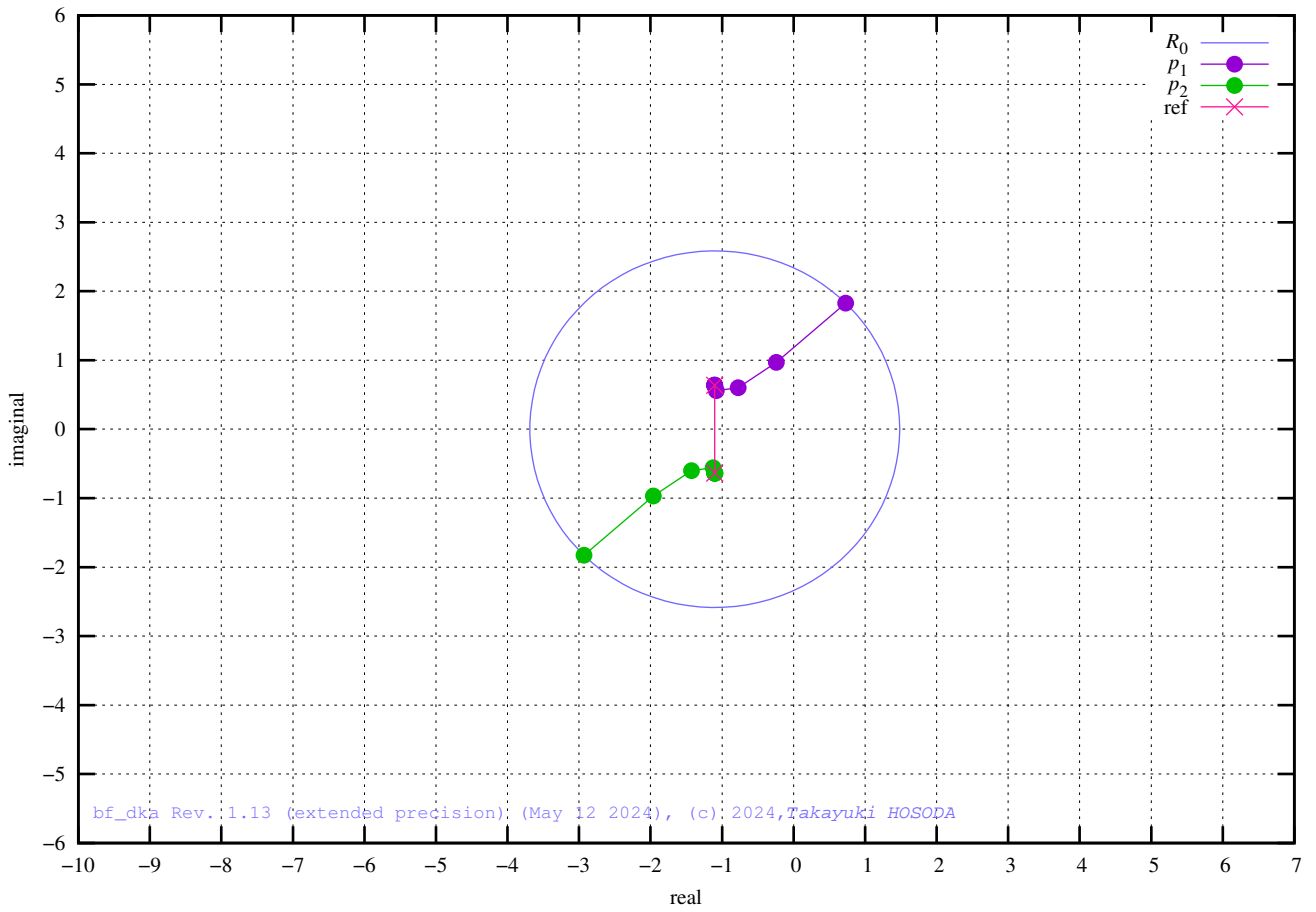# Convergence of the Durand-Kerner-Aberth Method When finding the poles of the Normalized Bessel filters
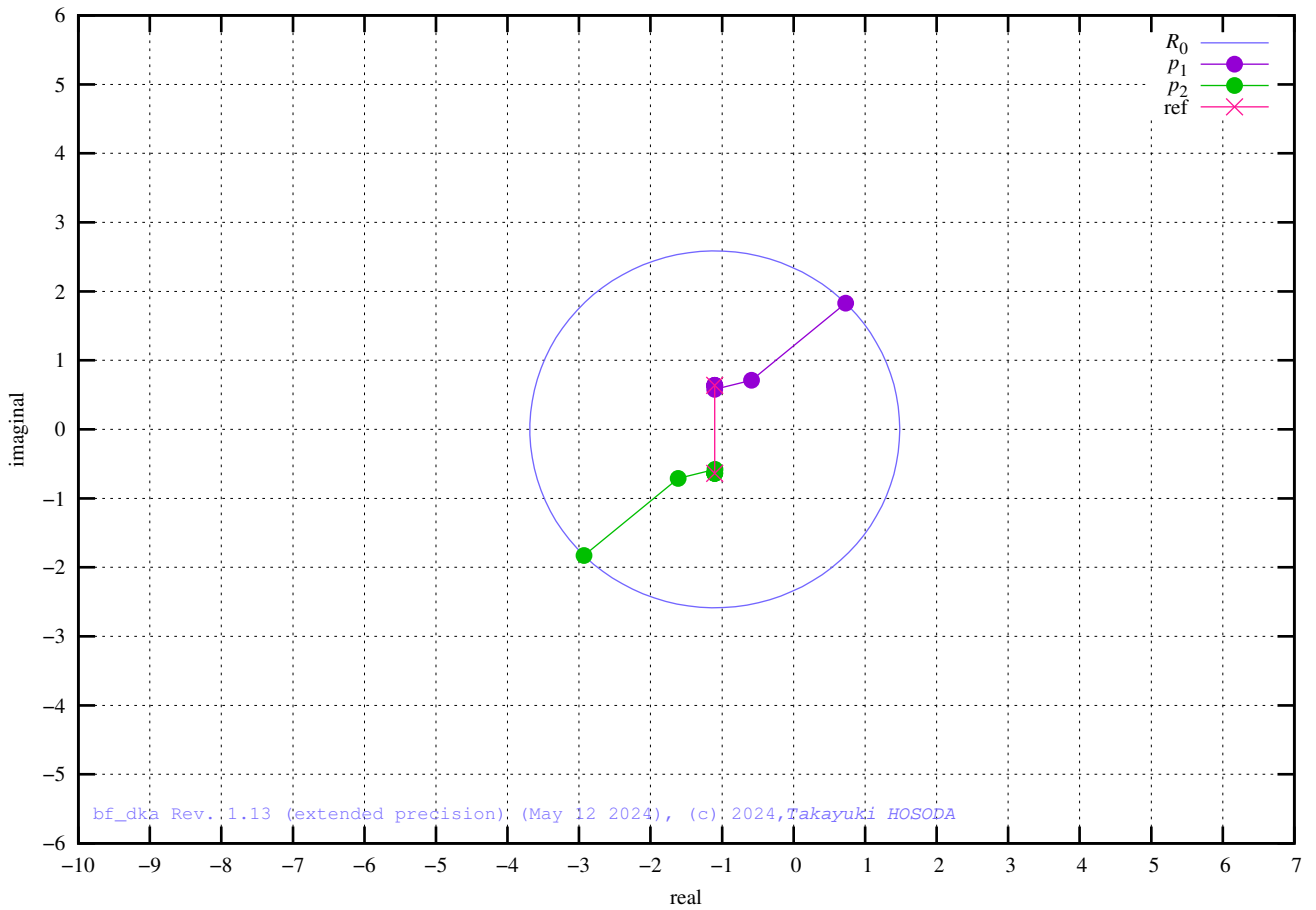
Takayuki HOSODA

May 12, 2024
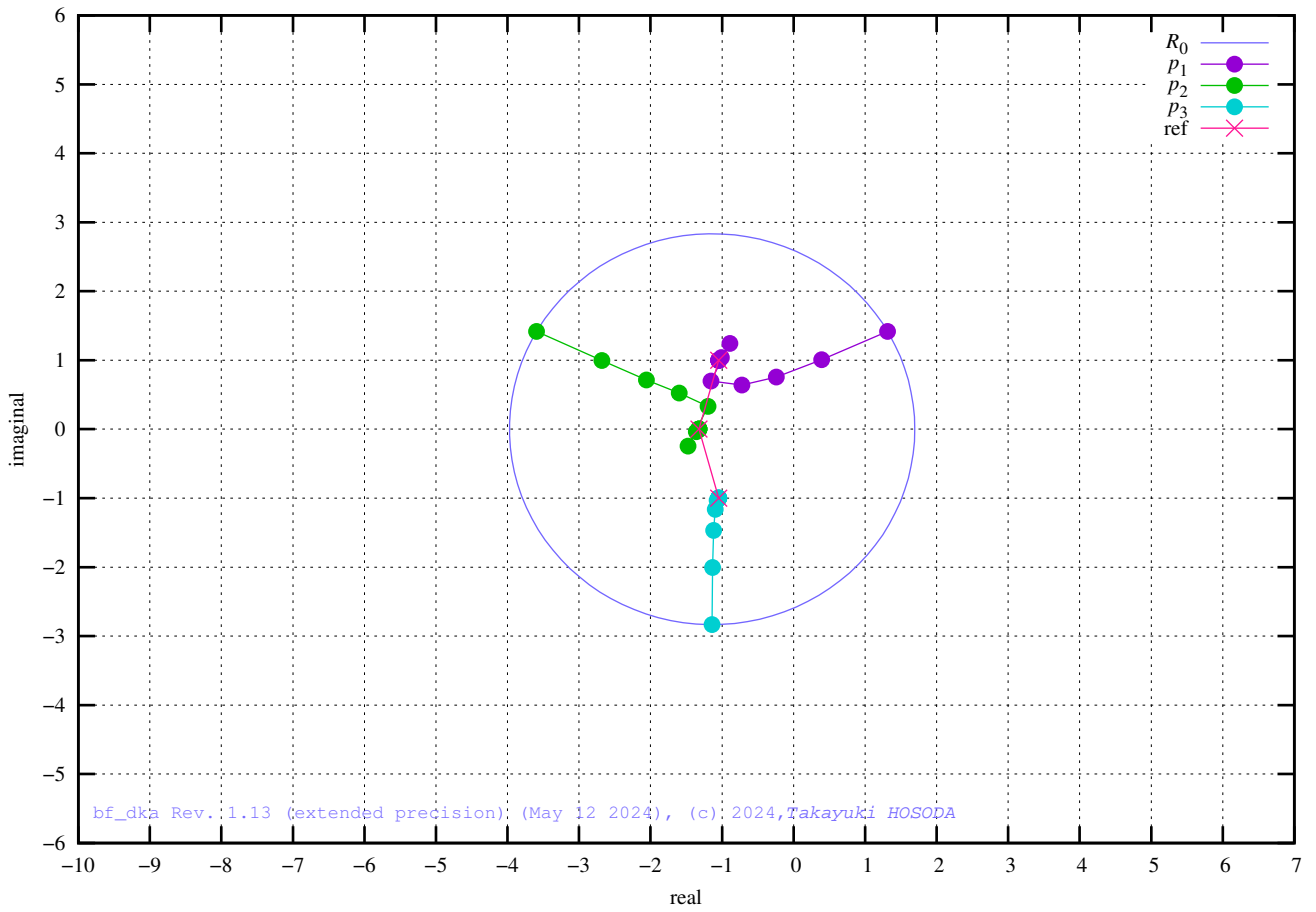
Finding all the poles of the 2–th order normalized Bessel filter by the Durand–Kerner method of 2–nd order convergence with deceleration.
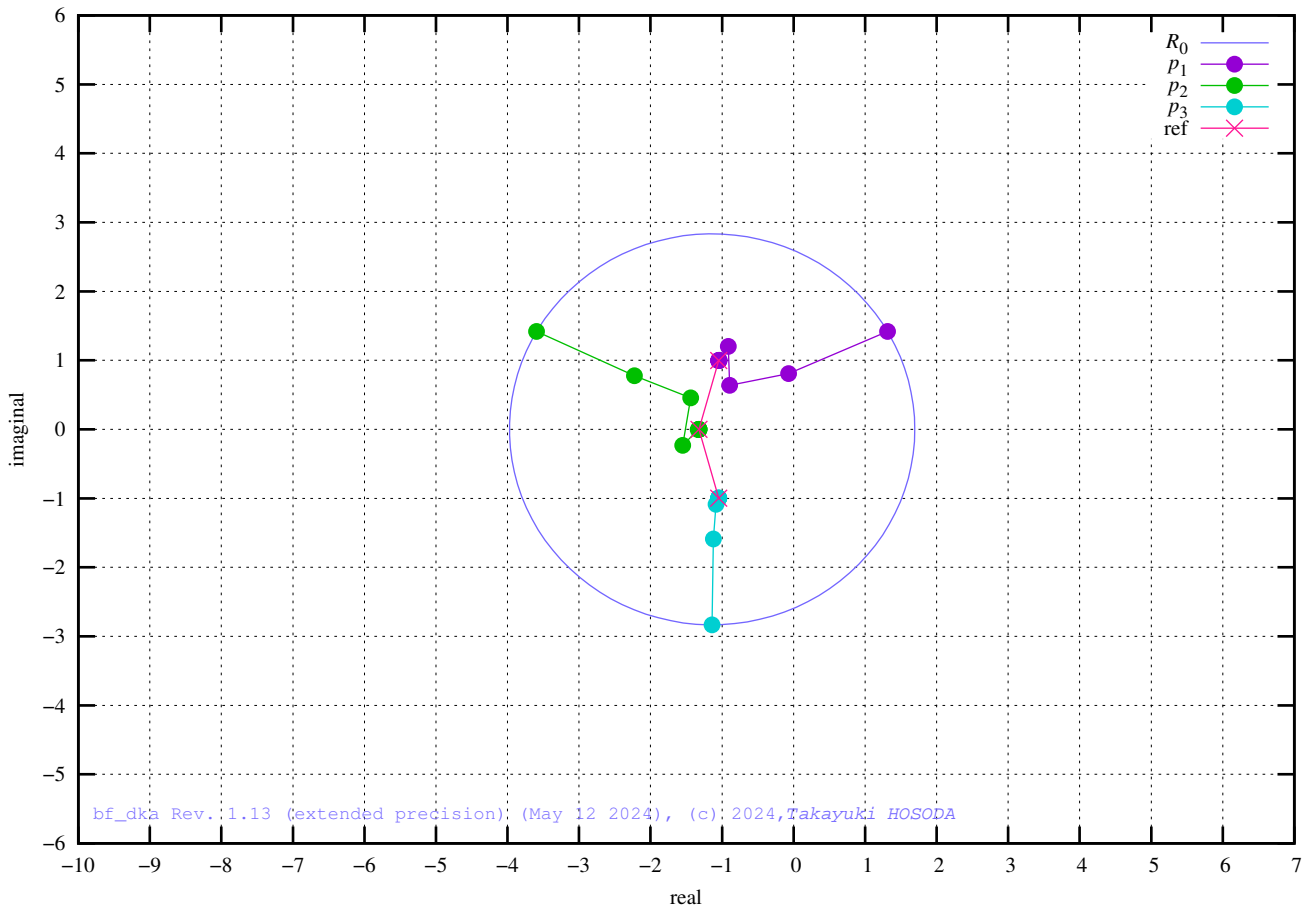

Finding all the poles of the 2–th order normalized Bessel filter by the Ehrlich–Aberth method of 3–rd convergence with deceleration.
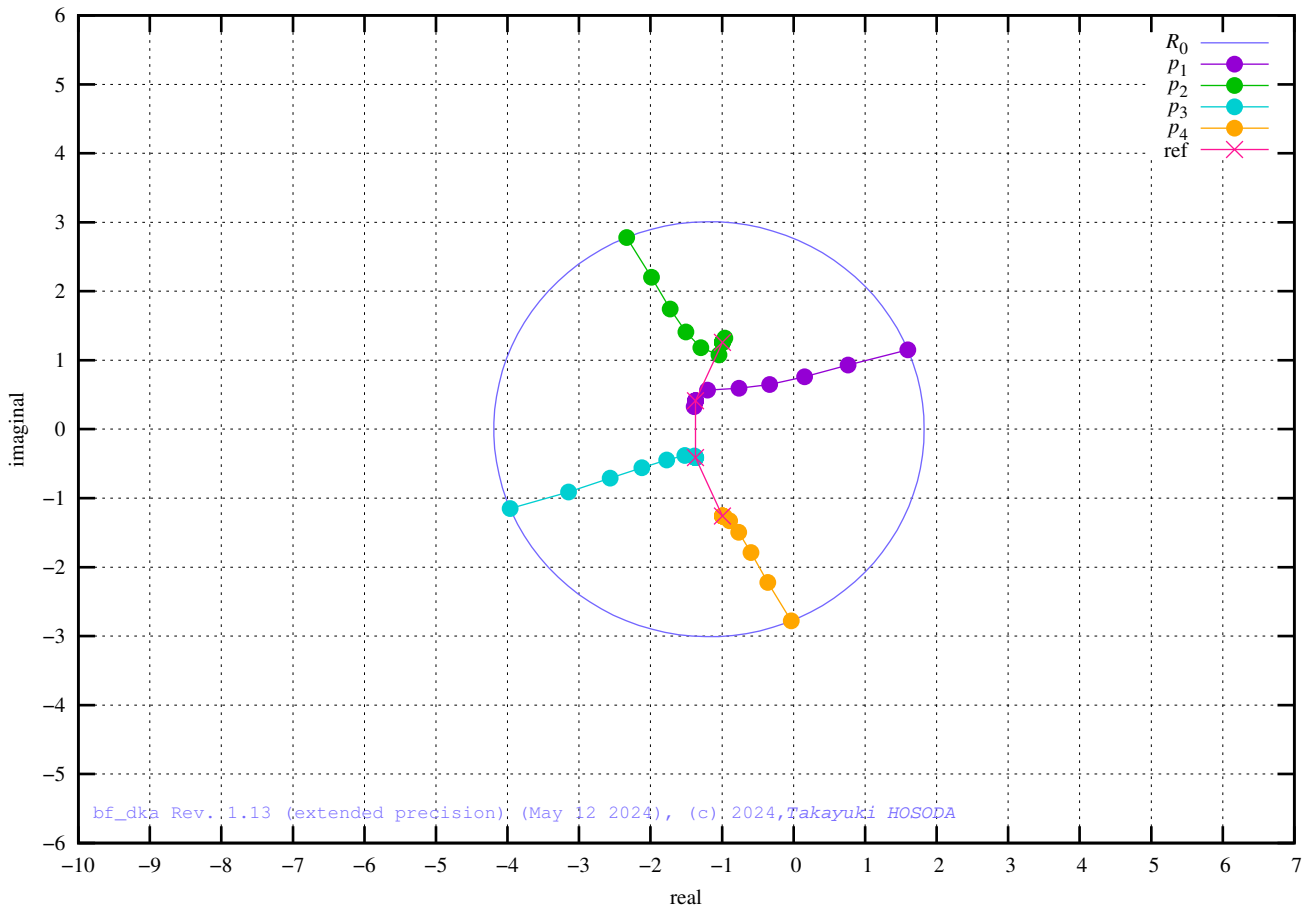
Finding all the poles of the 3−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.

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Finding all the poles of the 3−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

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Finding all the poles of the 4−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
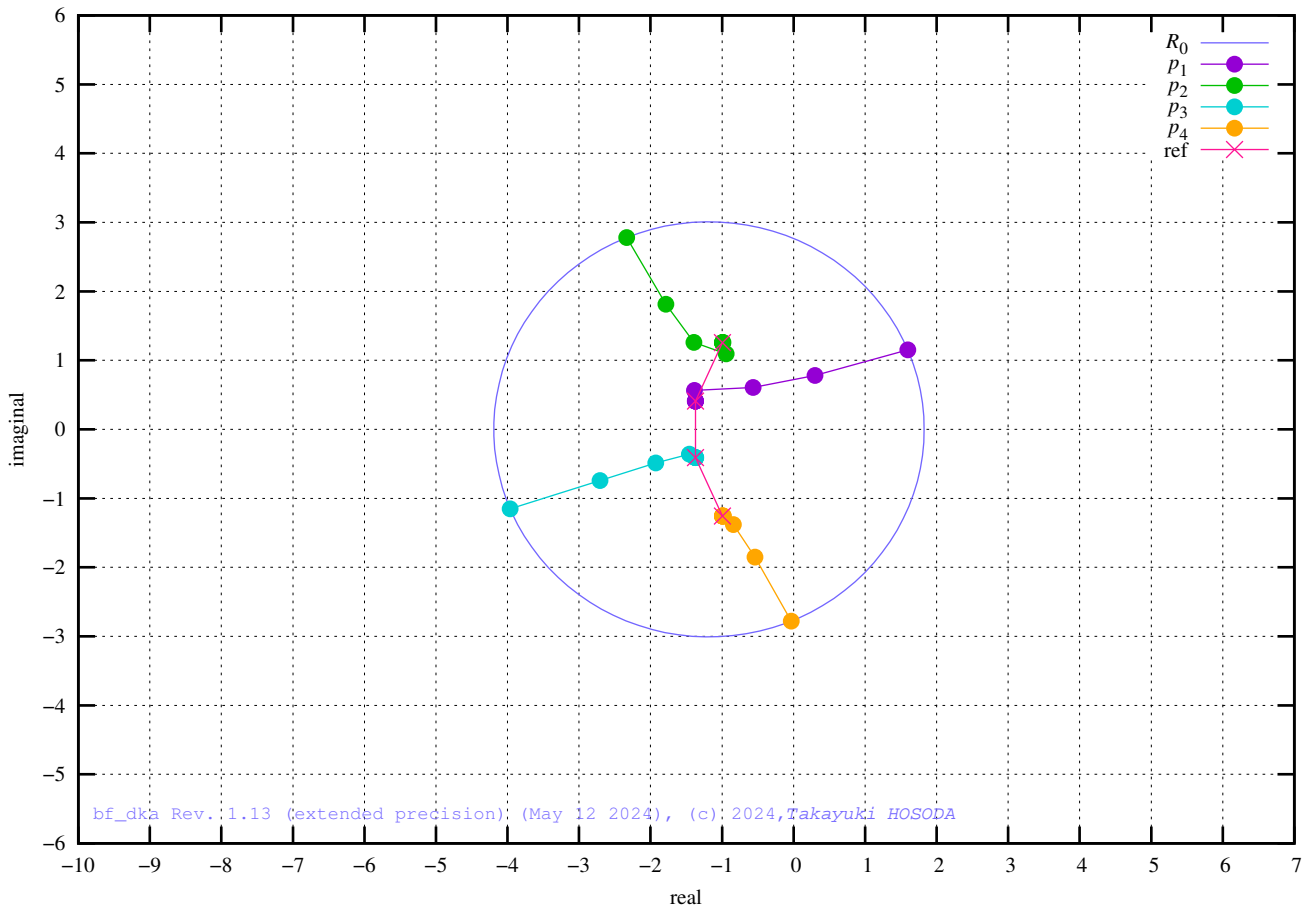
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Finding all the poles of the 4−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

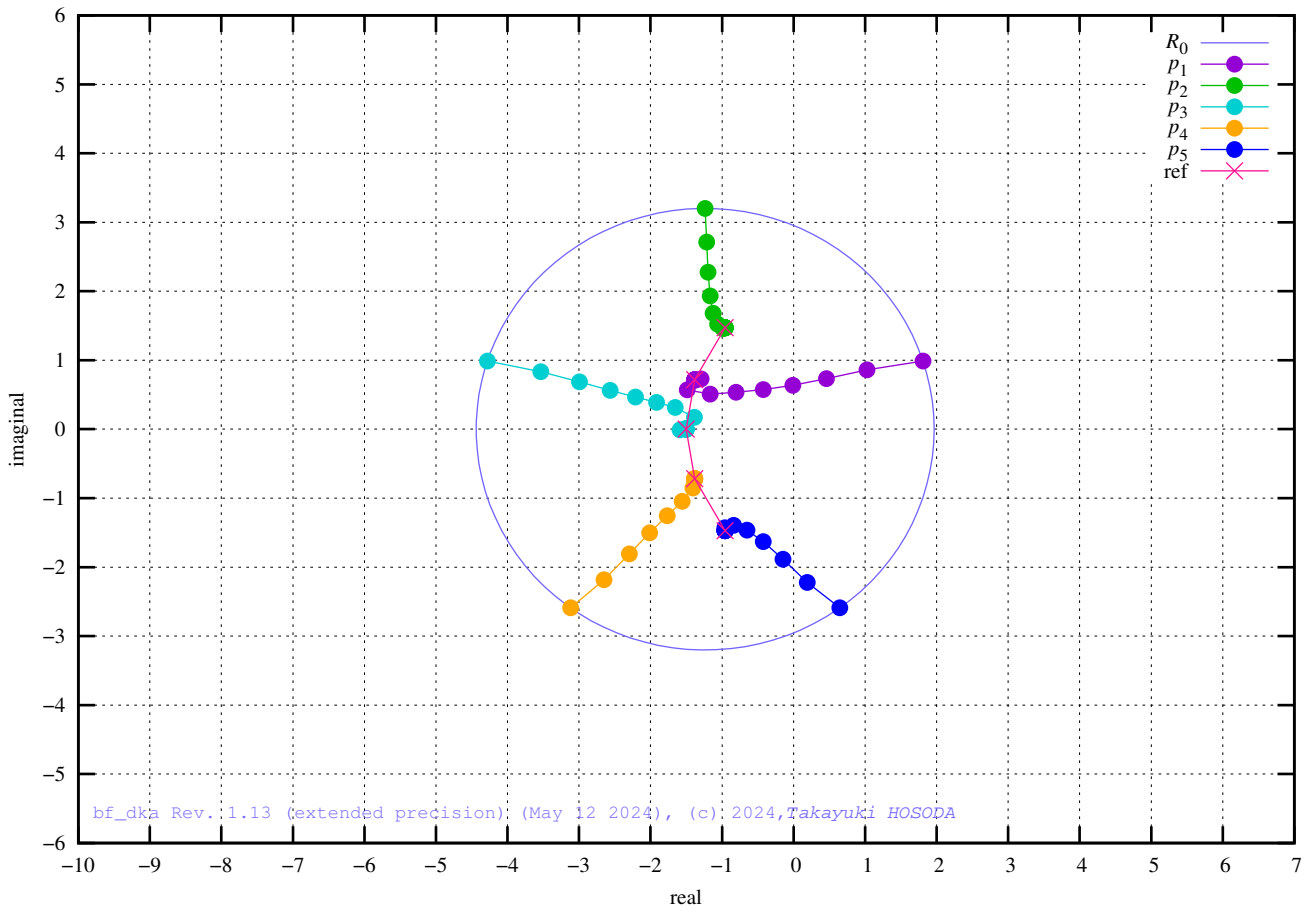bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 5−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
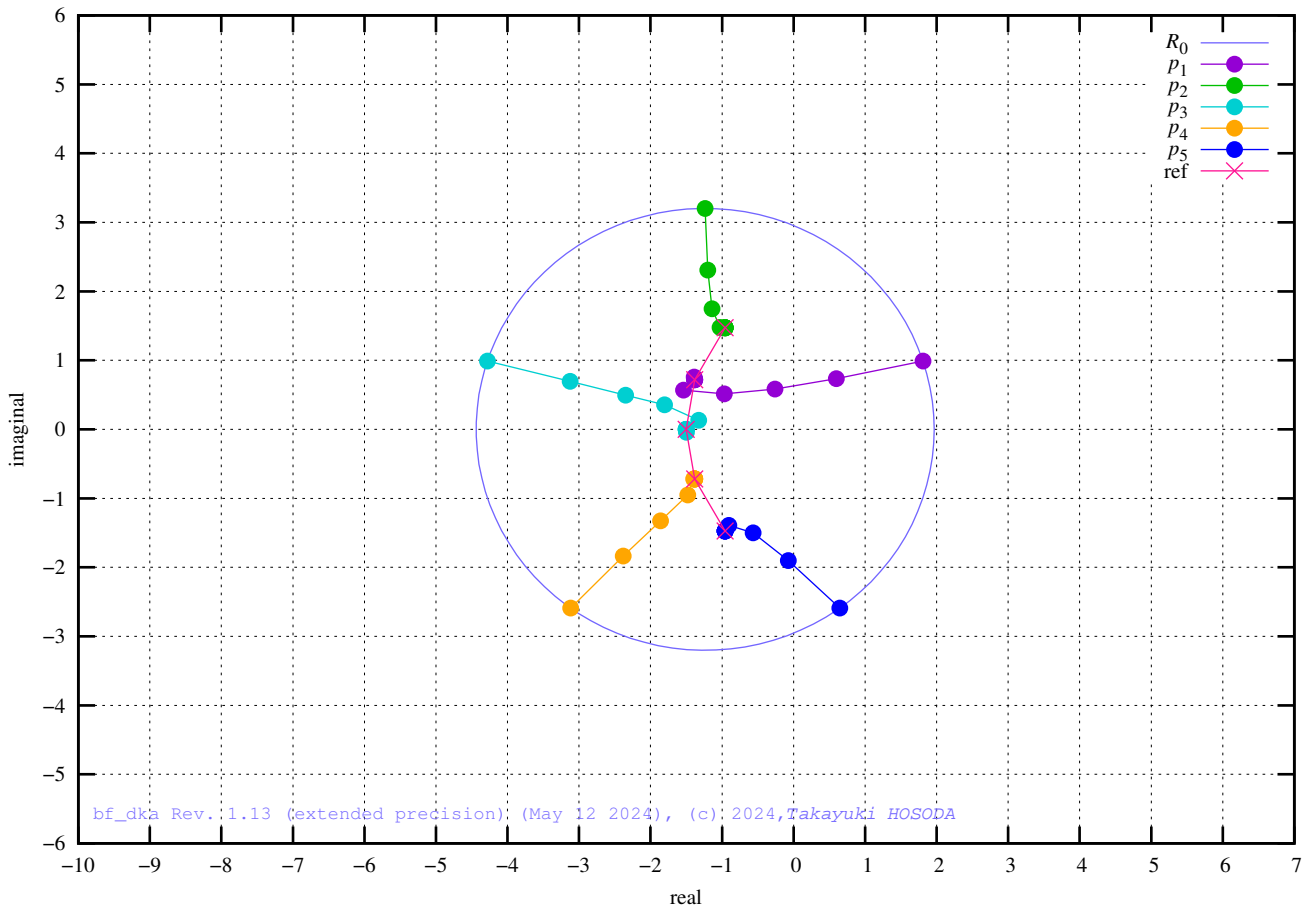

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Finding all the poles of the 5−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

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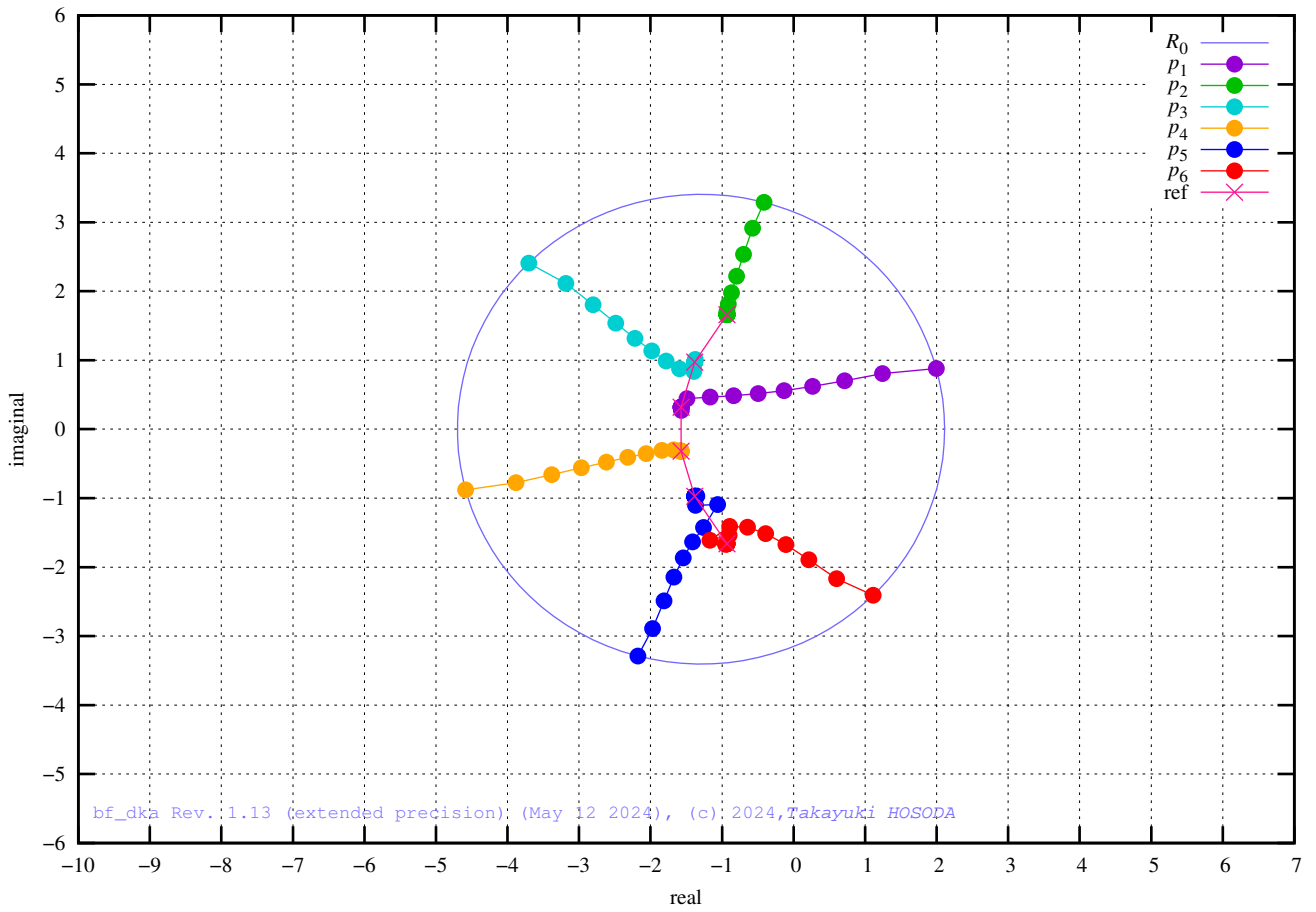
Finding all the poles of the 6−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
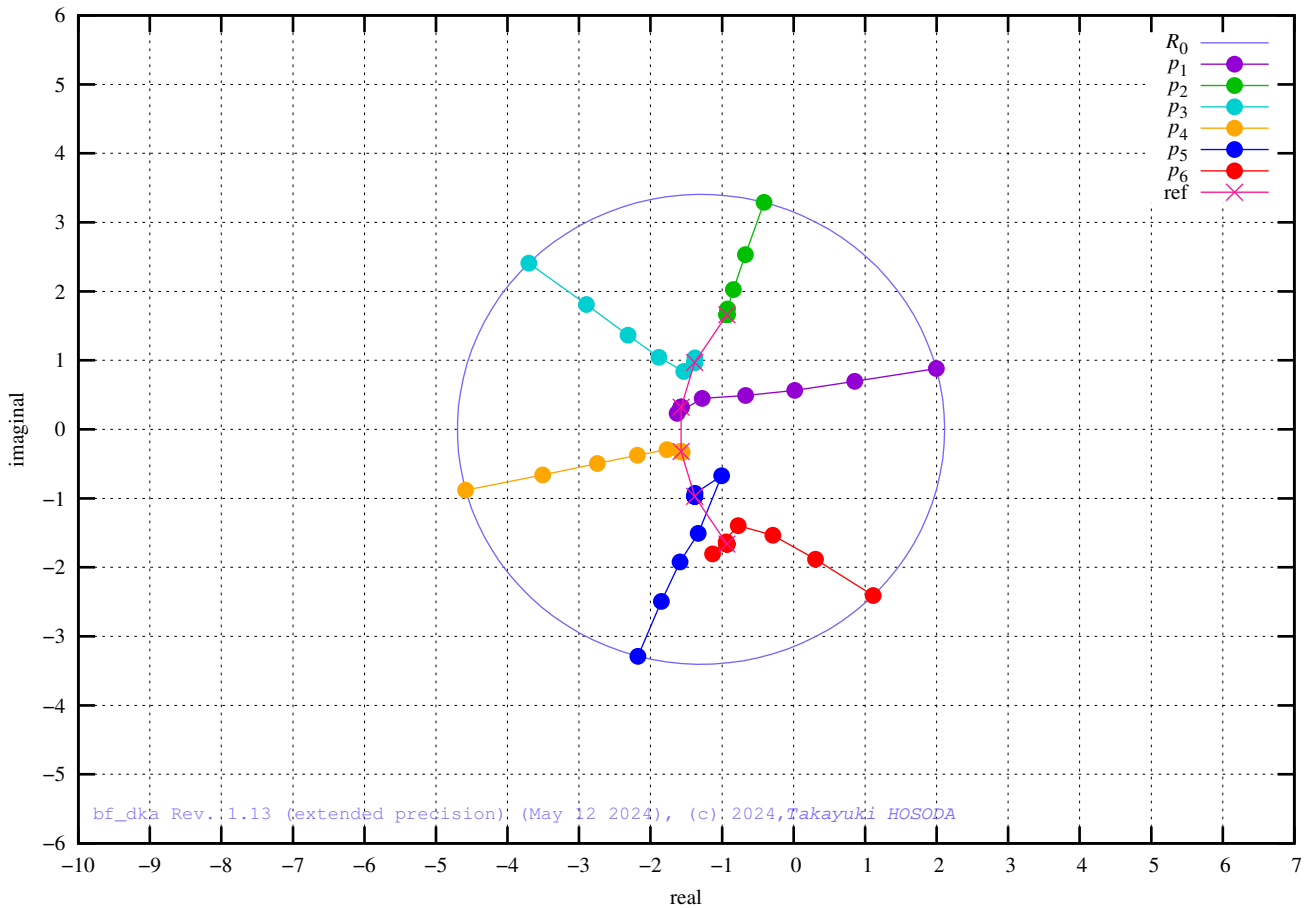
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Finding all the poles of the 6−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

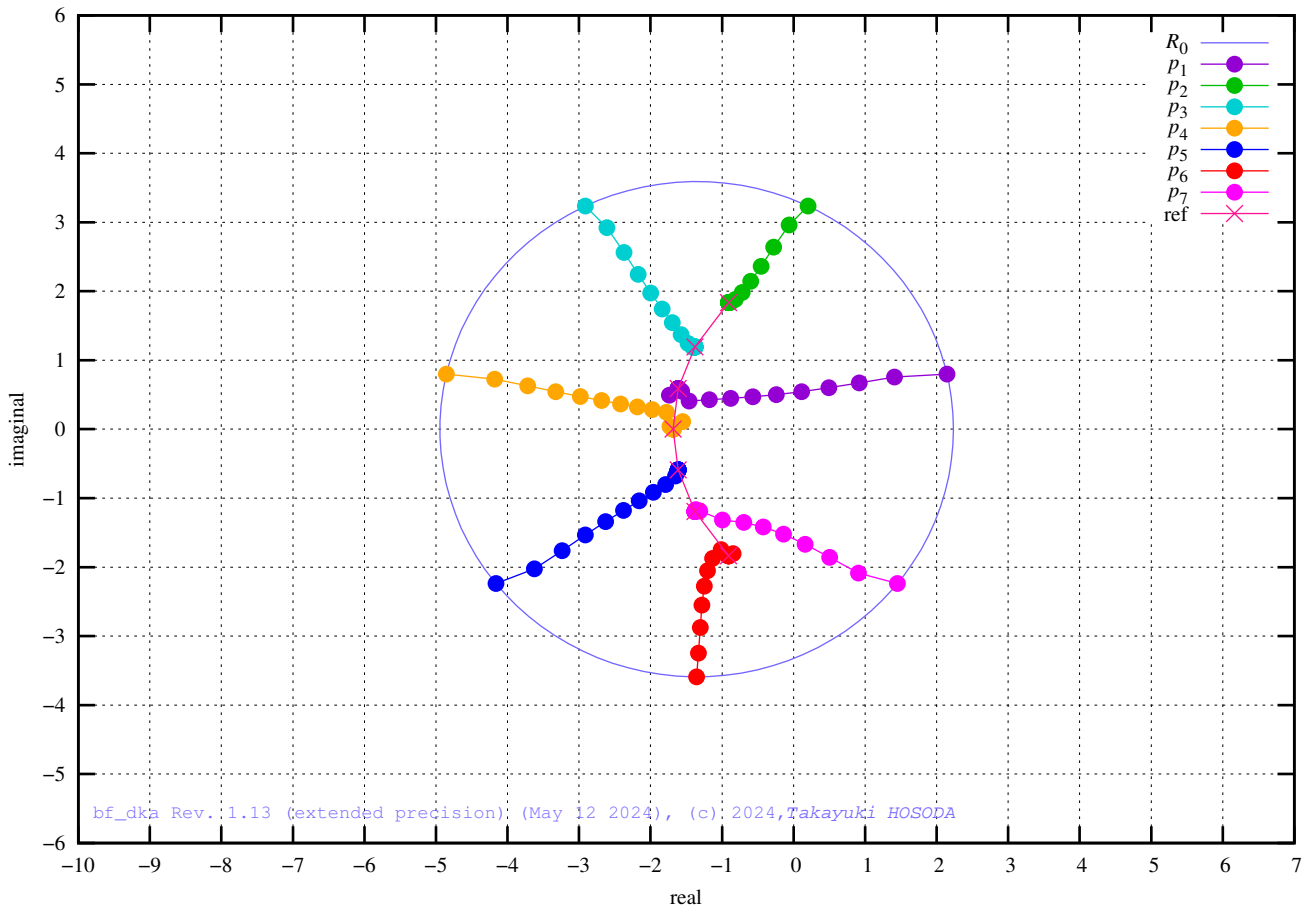bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,Takayuki HOSODA

Finding all the poles of the 7−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
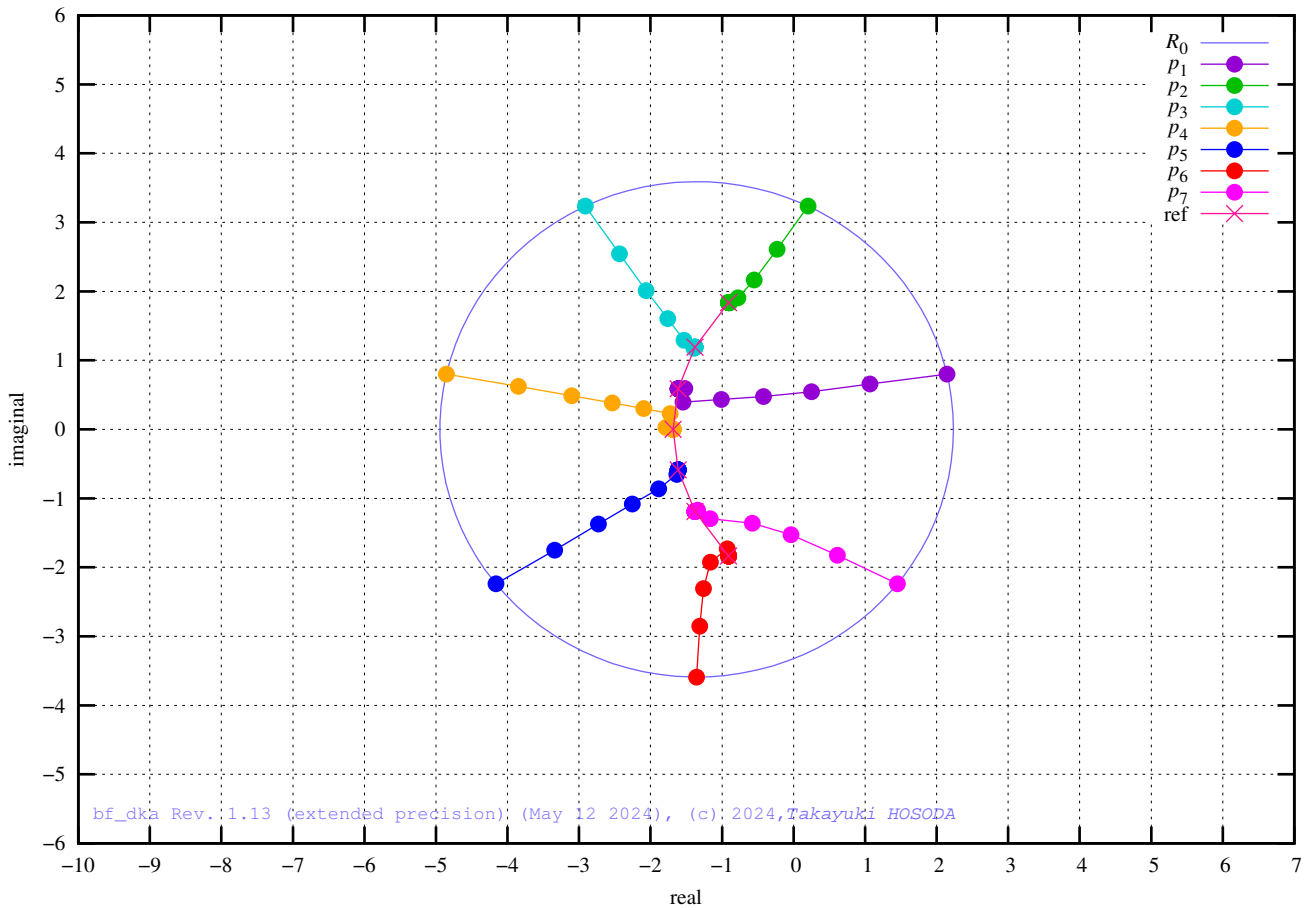
bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 7−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

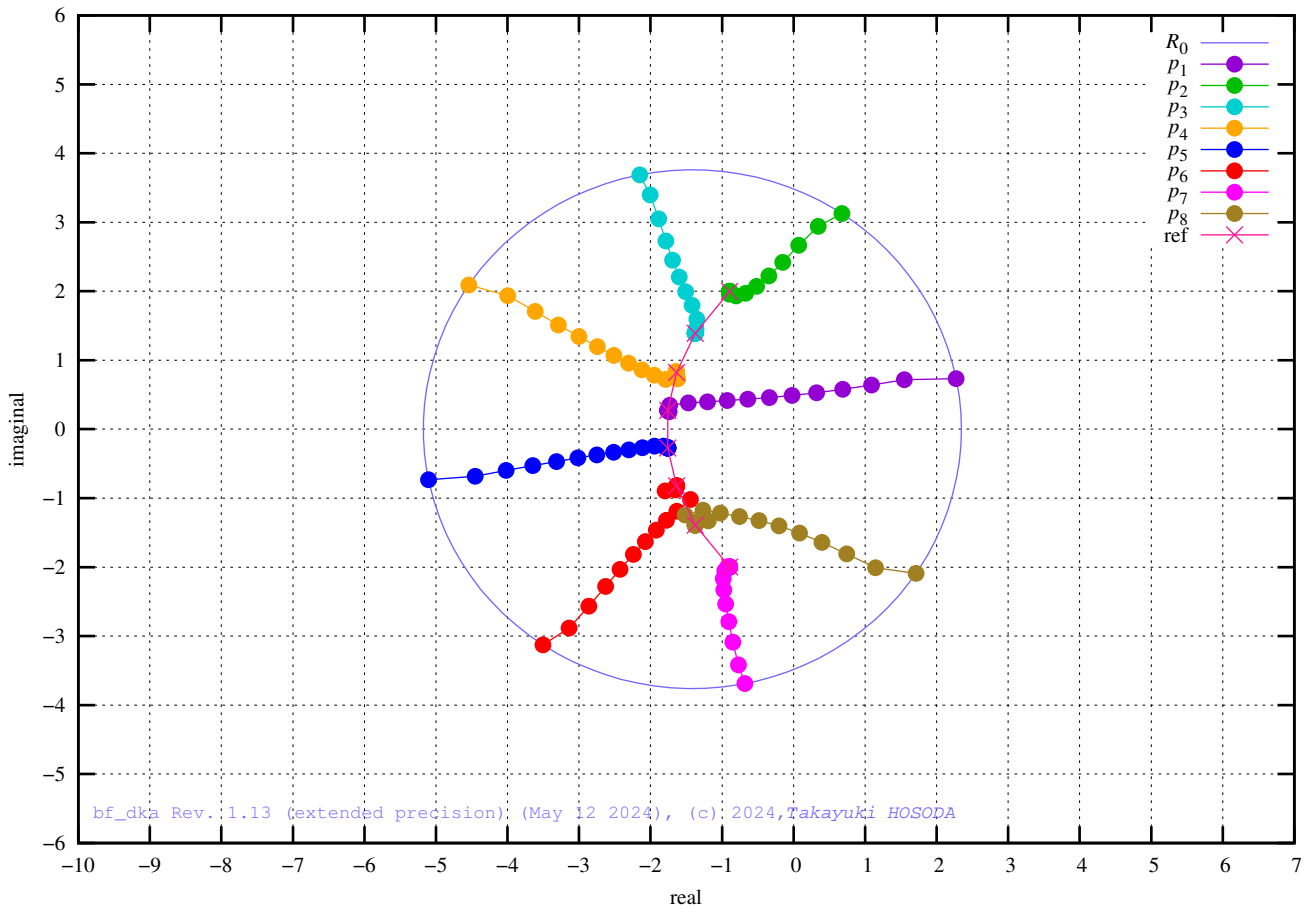bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 8−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
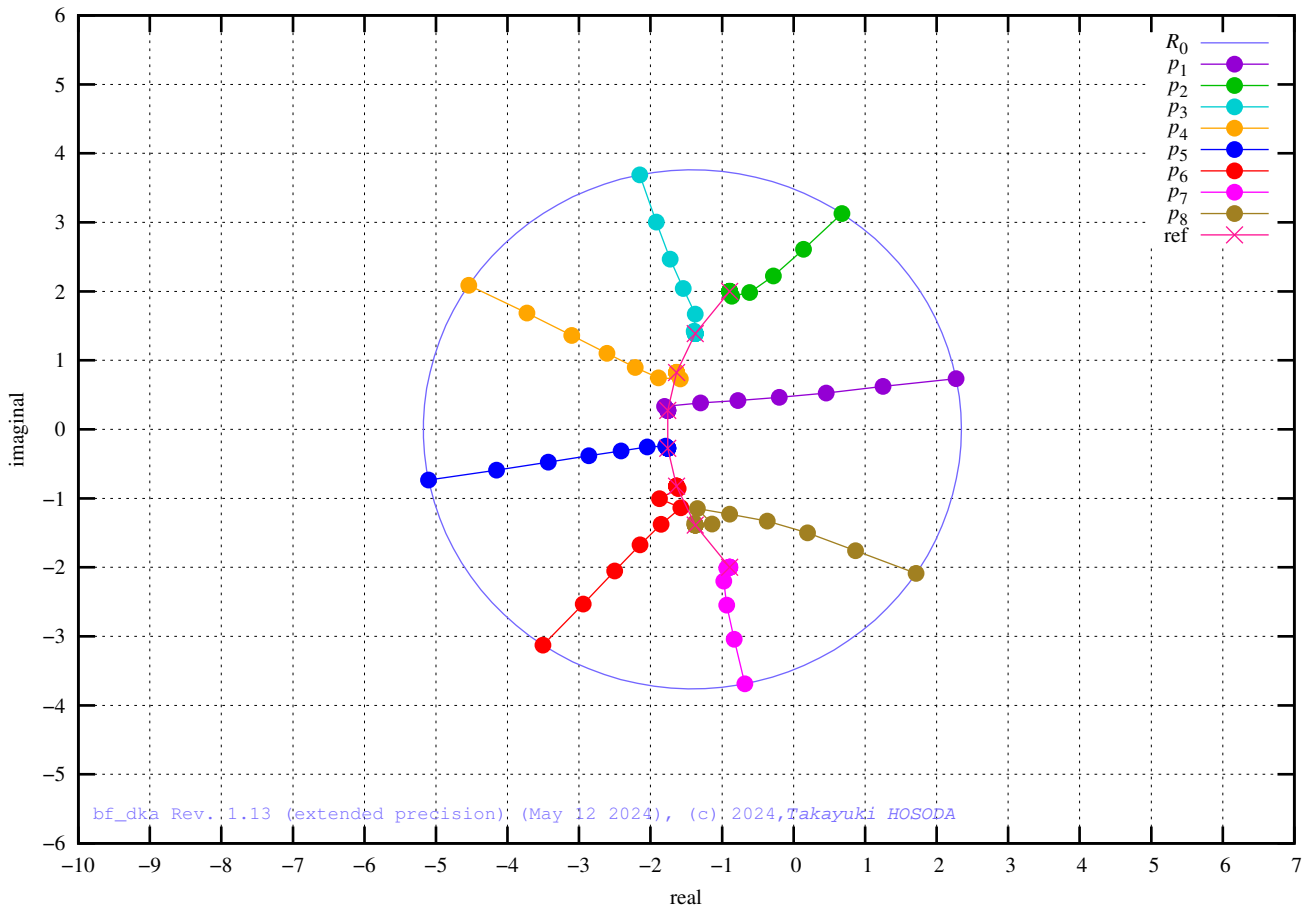
bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 8−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

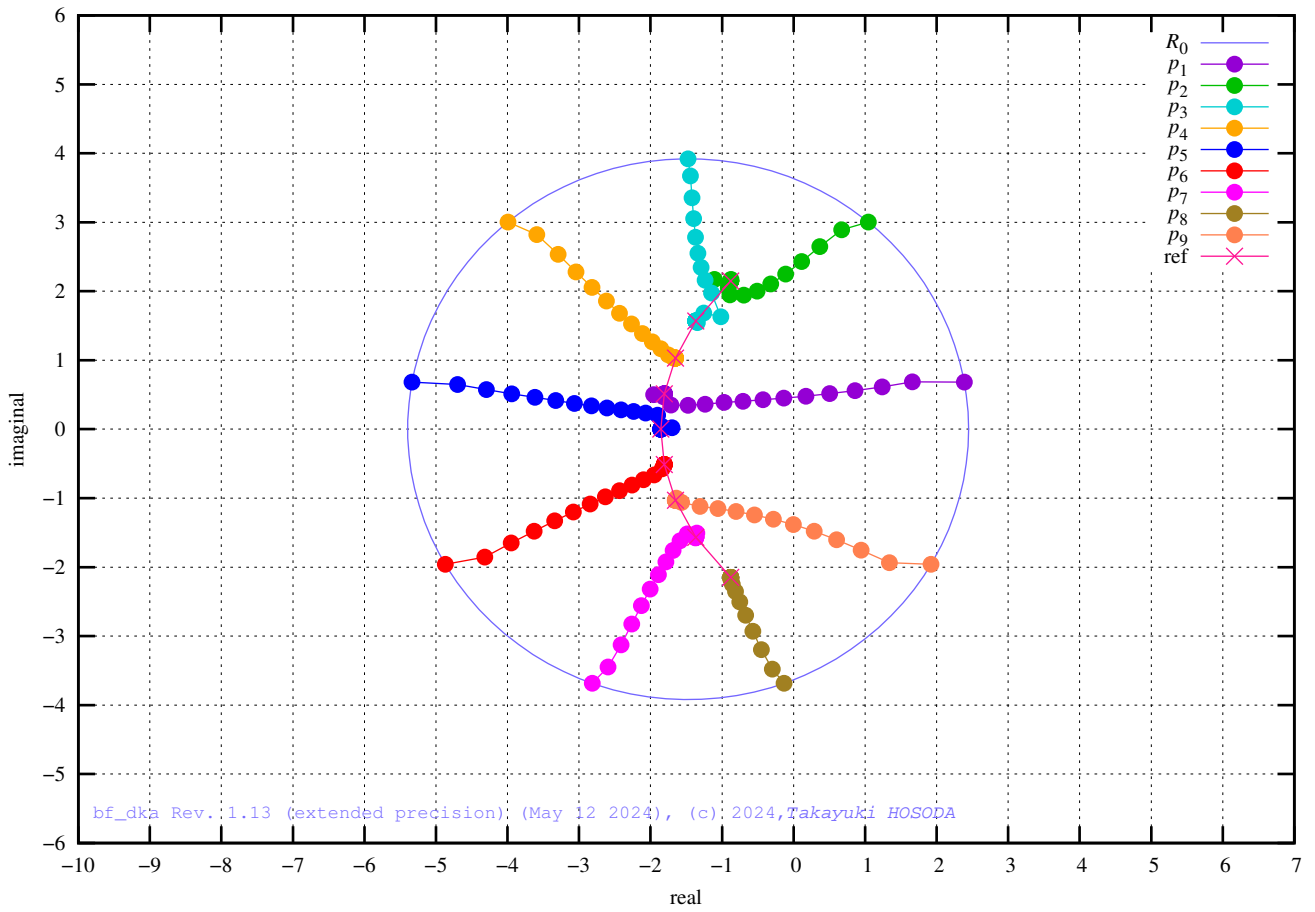bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 9–th order normalized Bessel filter by the Durand–Kerner method of 2–nd order convergence with deceleration.

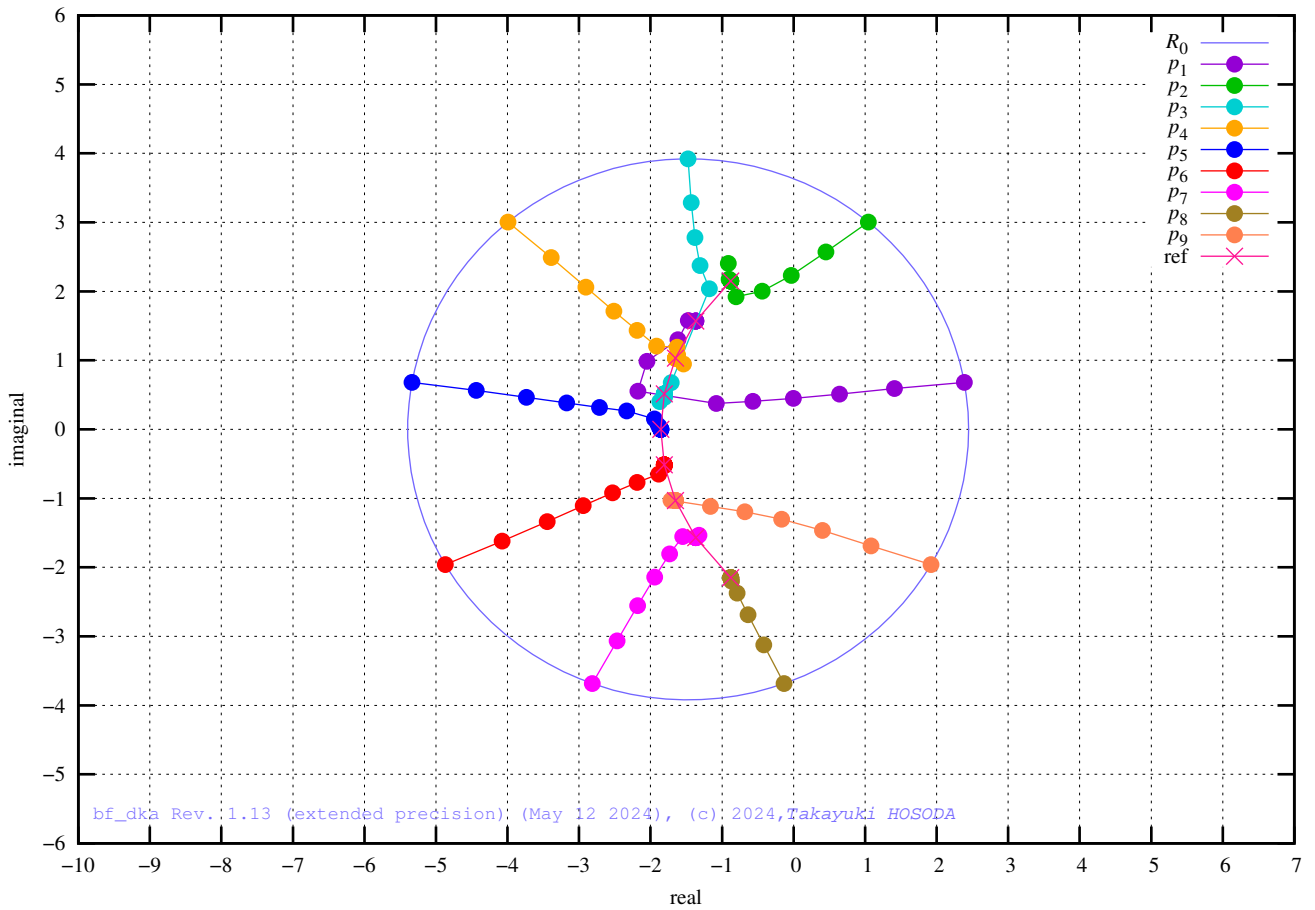bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 9–th order normalized Bessel filter by the Ehrlich–Aberth method of 3–rd convergence with deceleration.

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Finding all the poles of the 10−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.

Finding all the poles of the 10−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.
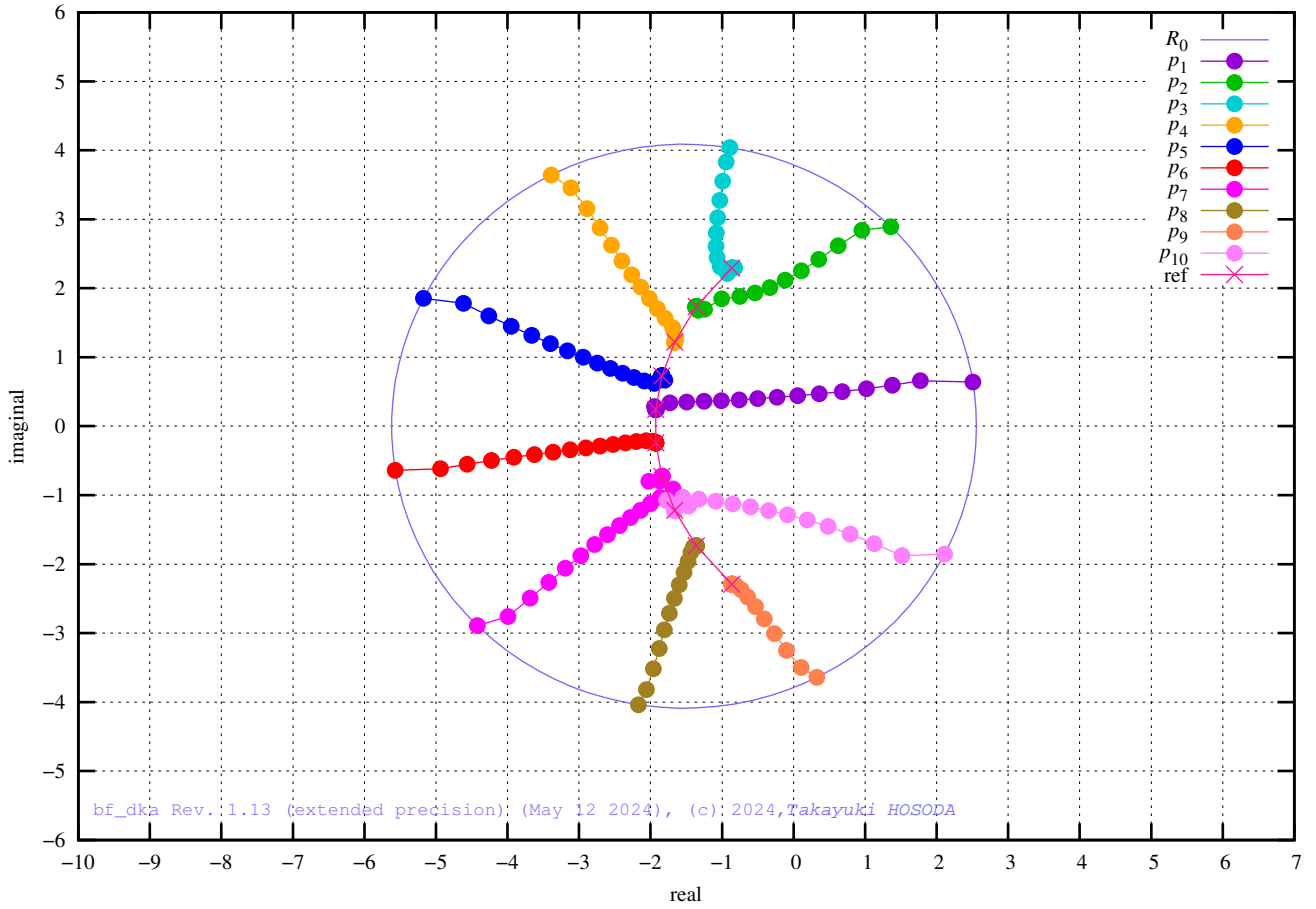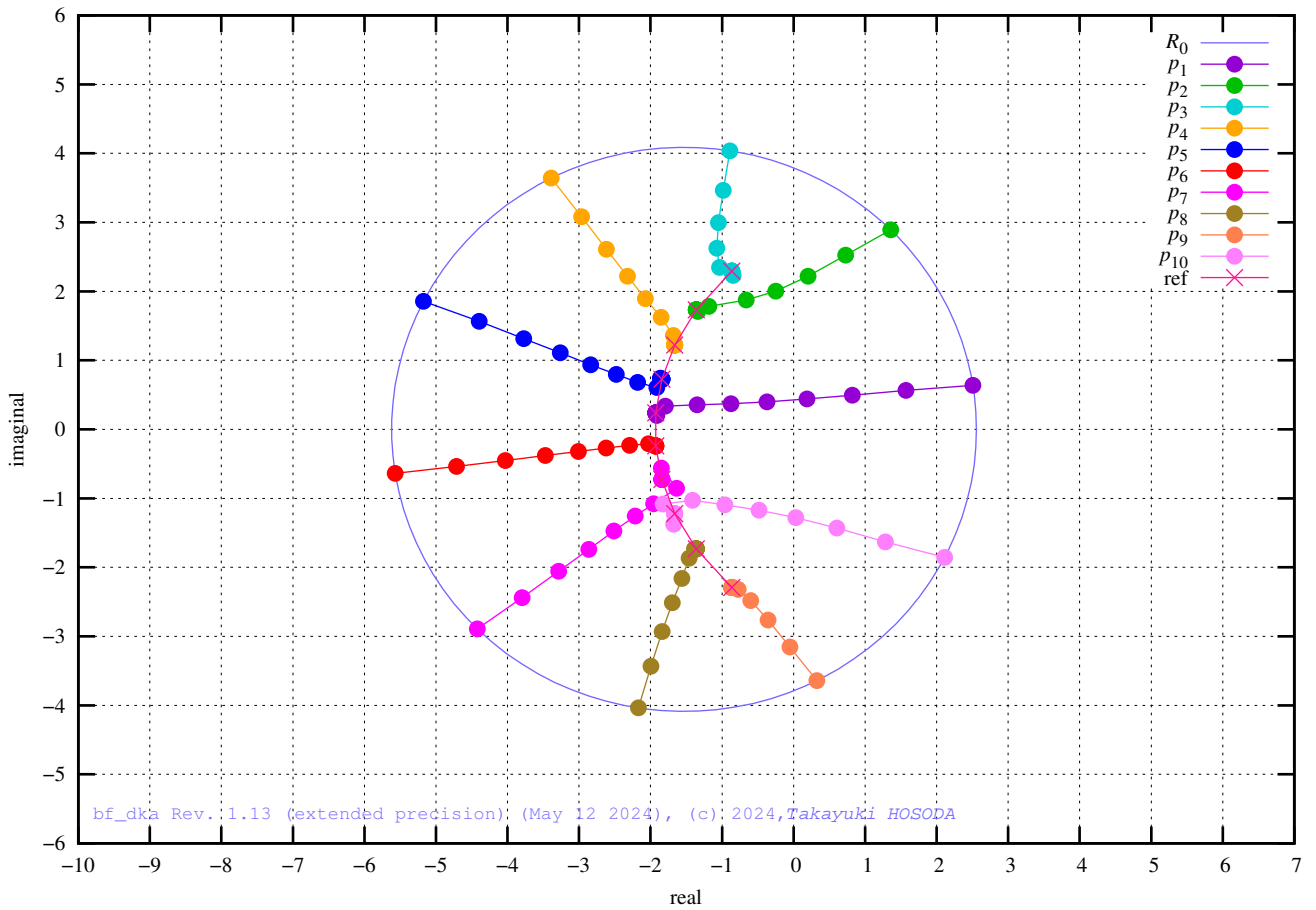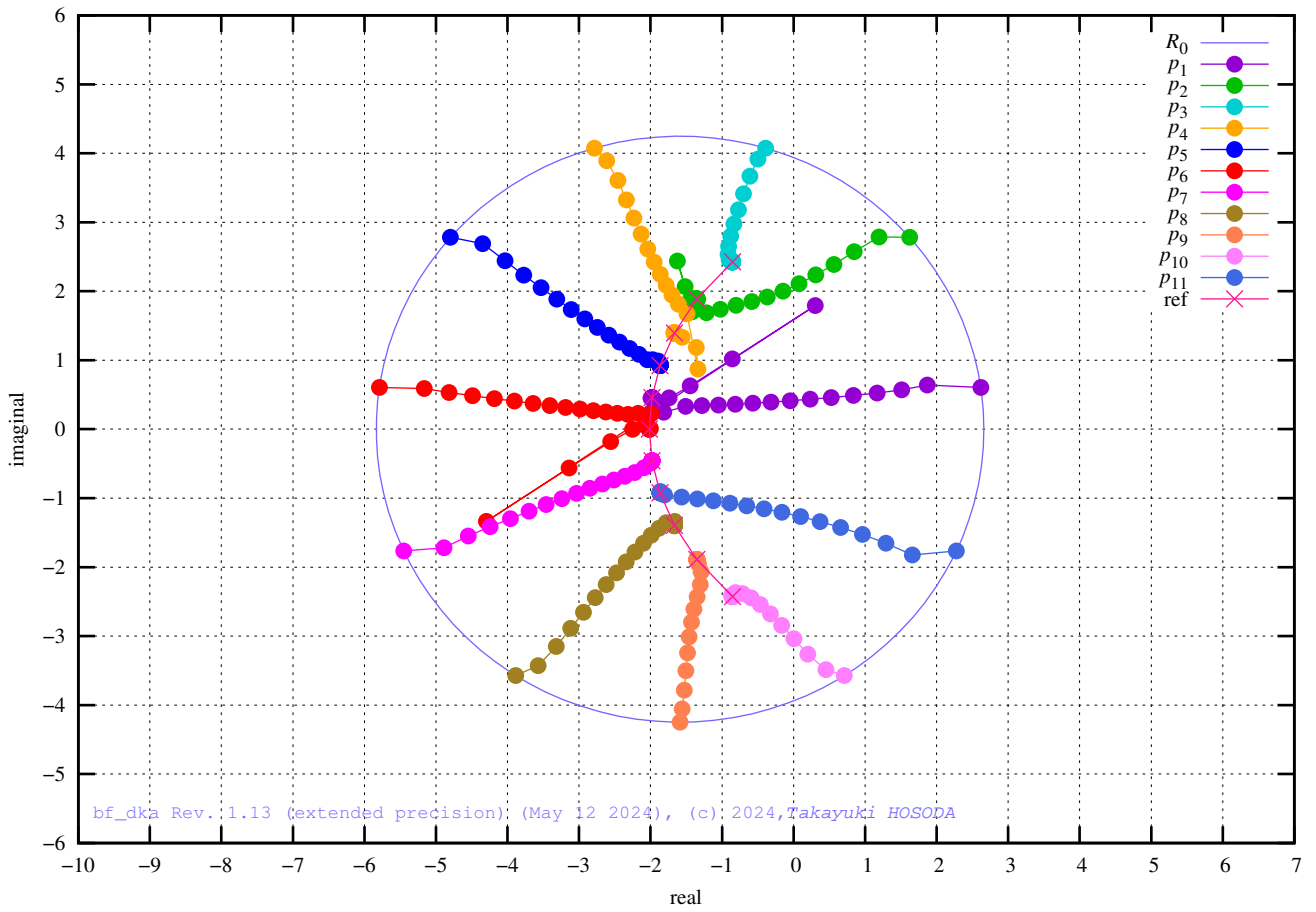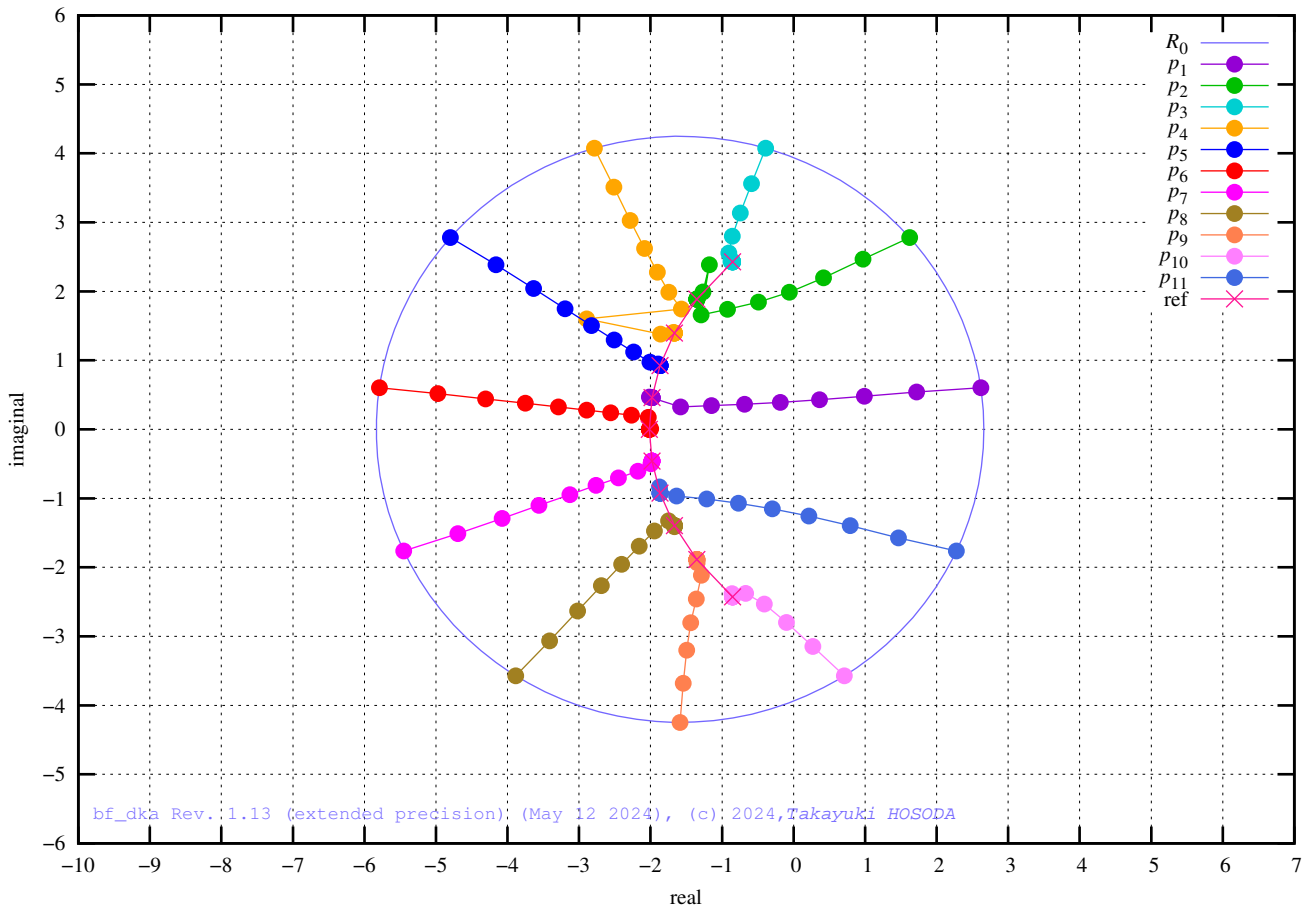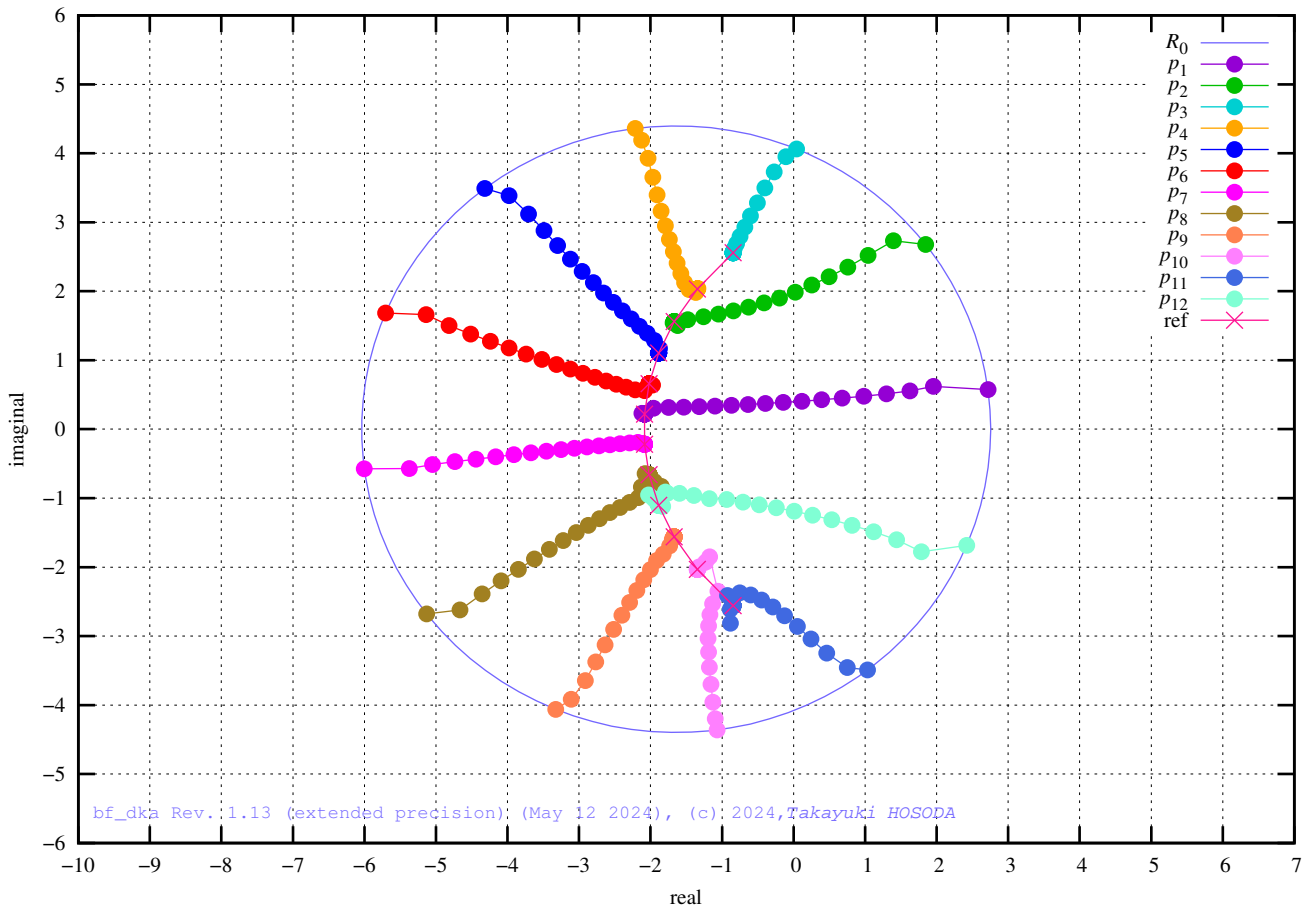
Finding all the poles of the 11−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.

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Finding all the poles of the 11−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

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Finding all the poles of the 12−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
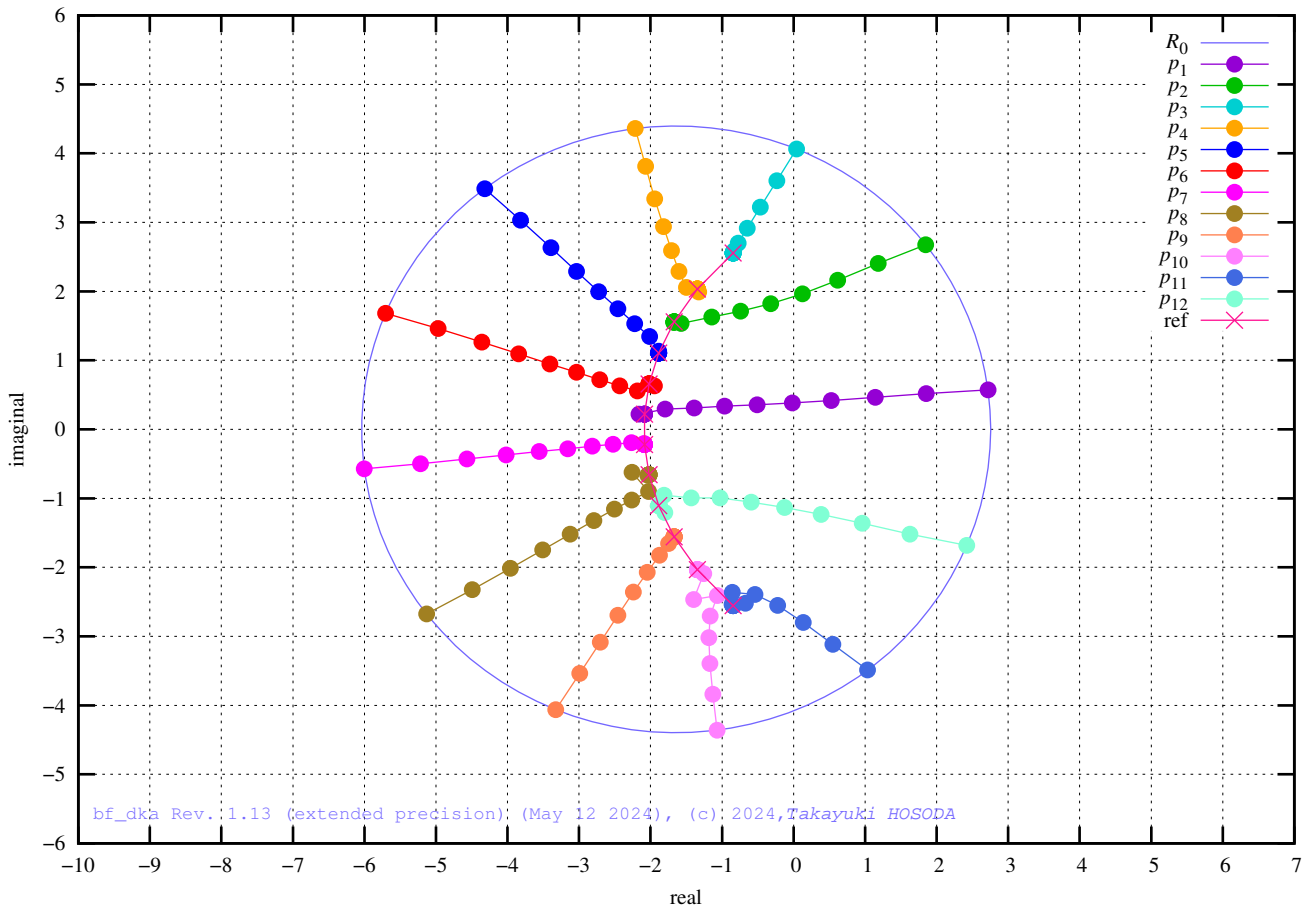
bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 12−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

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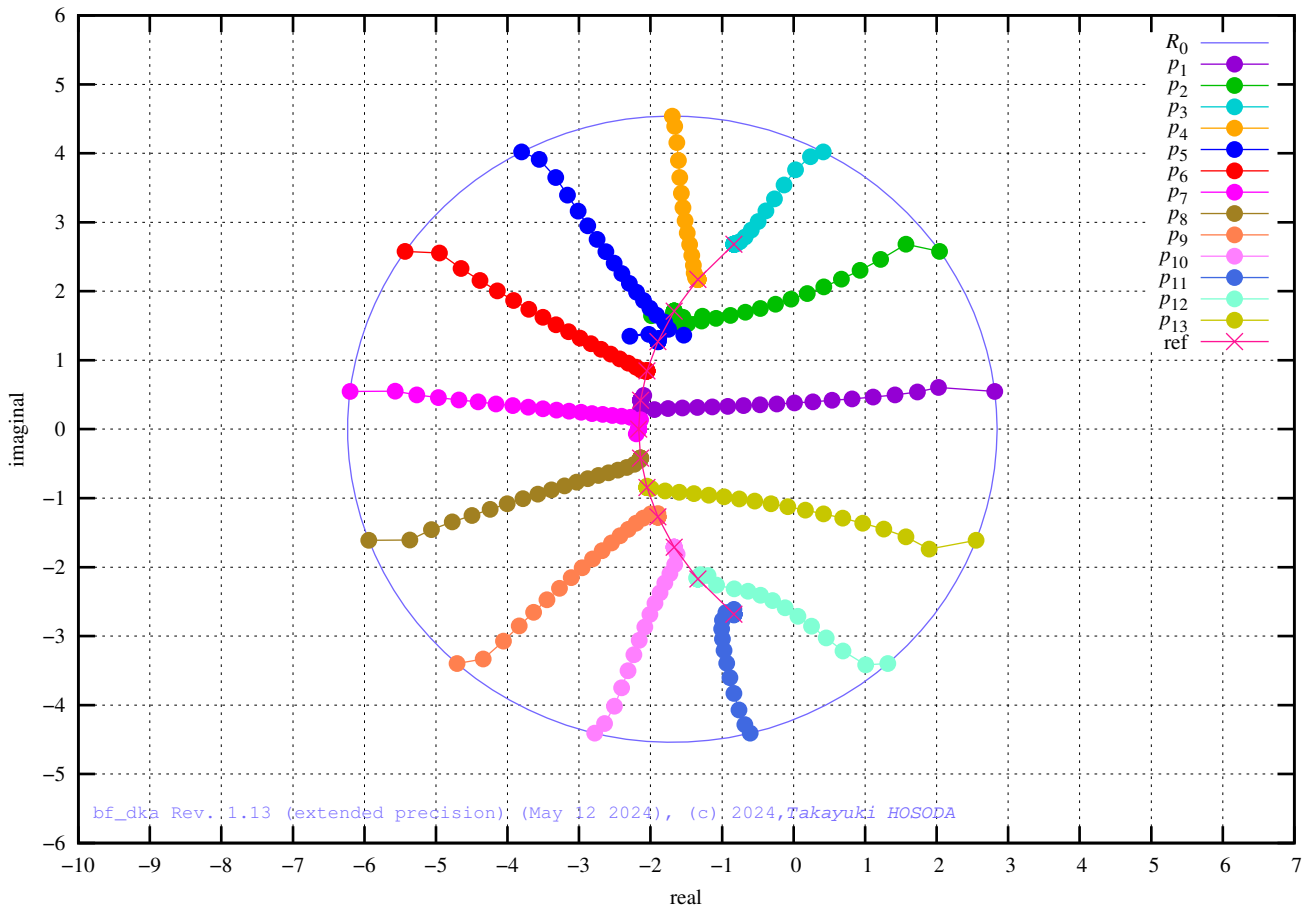
Finding all the poles of the 13−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
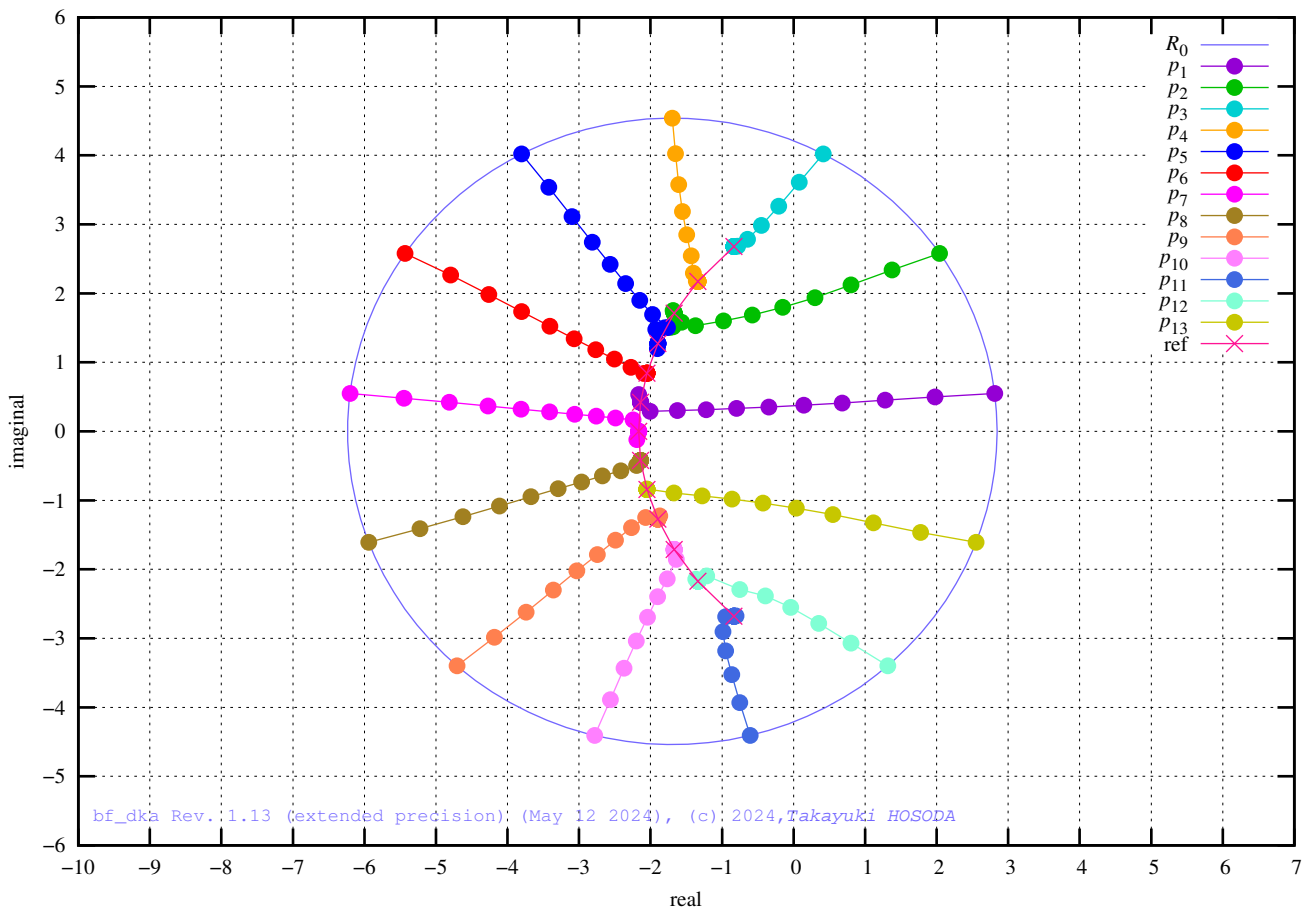
bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 13−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

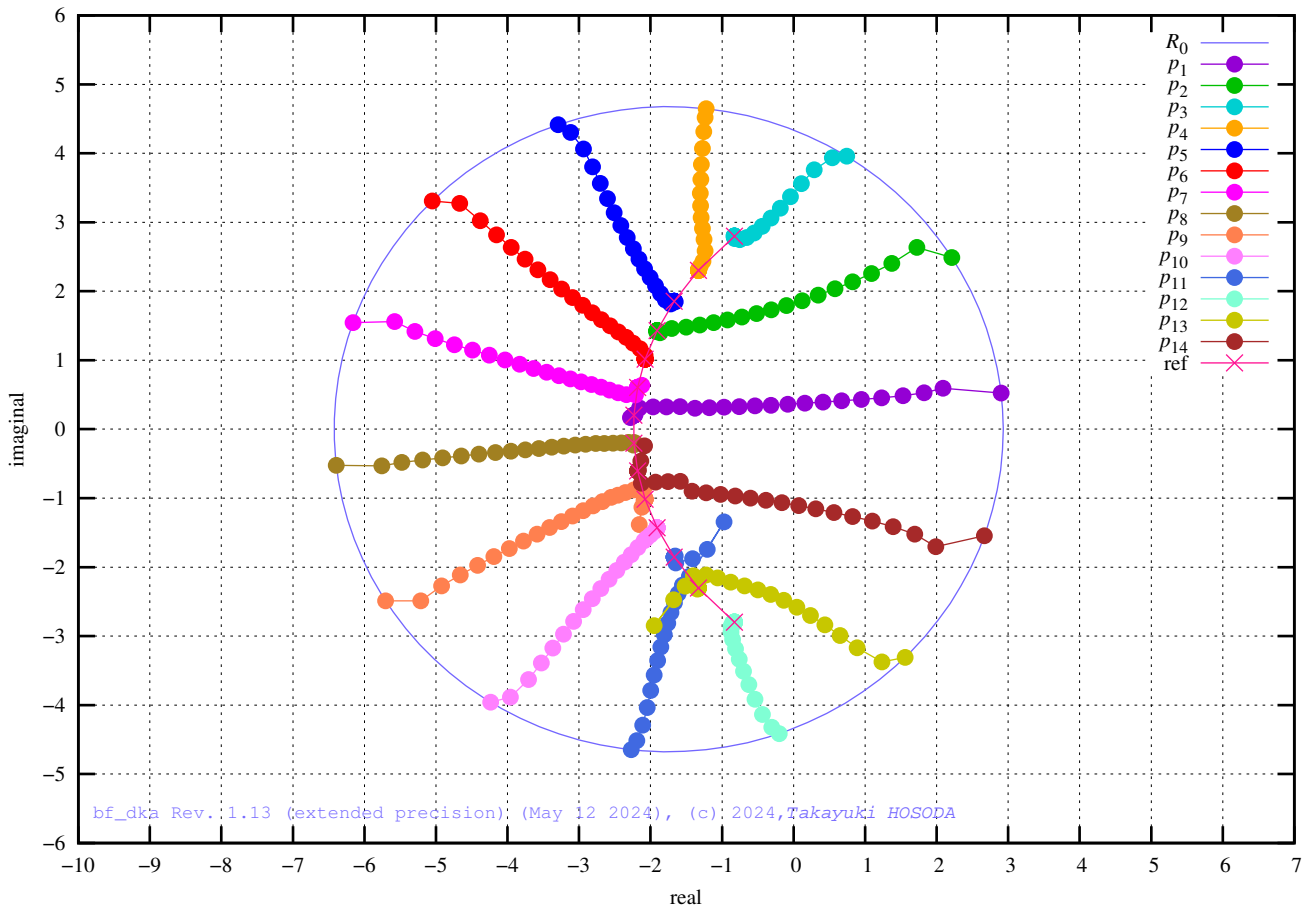bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 14–th order normalized Bessel filter by the Durand–Kerner method of 2–nd order convergence with deceleration.
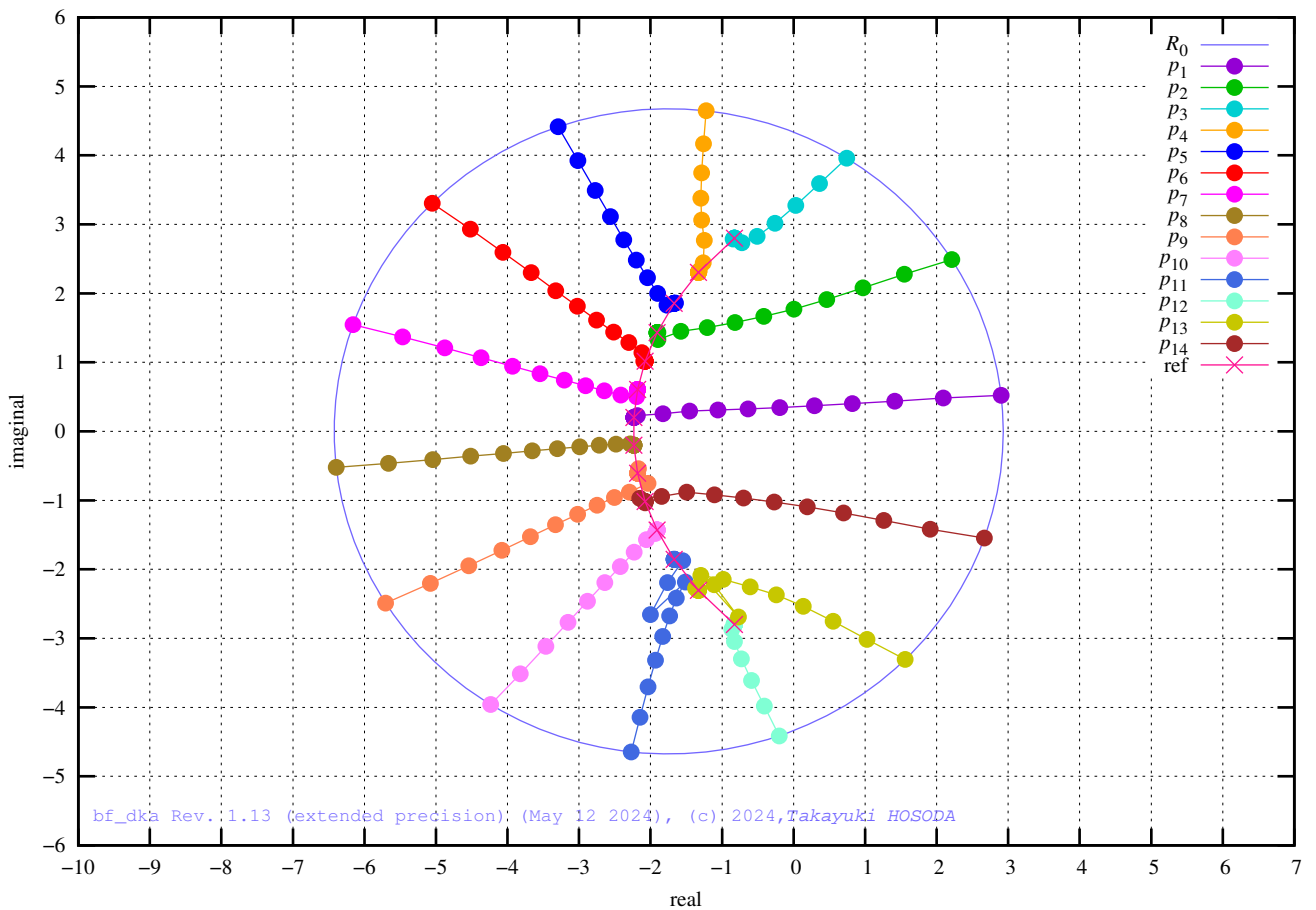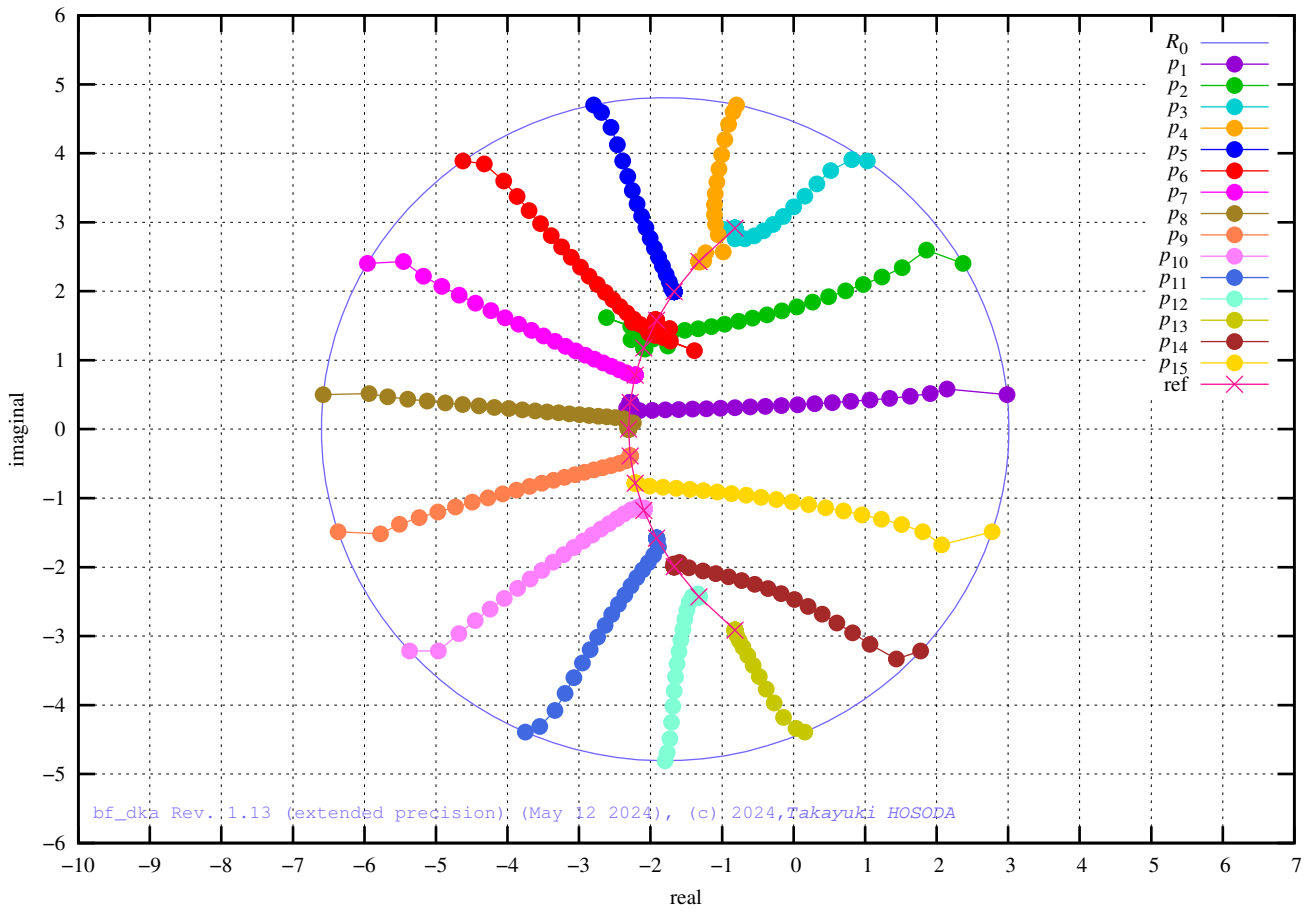
Finding all the poles of the 14–th order normalized Bessel filter by the Ehrlich–Aberth method of 3–rd convergence with deceleration.

bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,Takayuki HOSODA

Finding all the poles of the 15−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
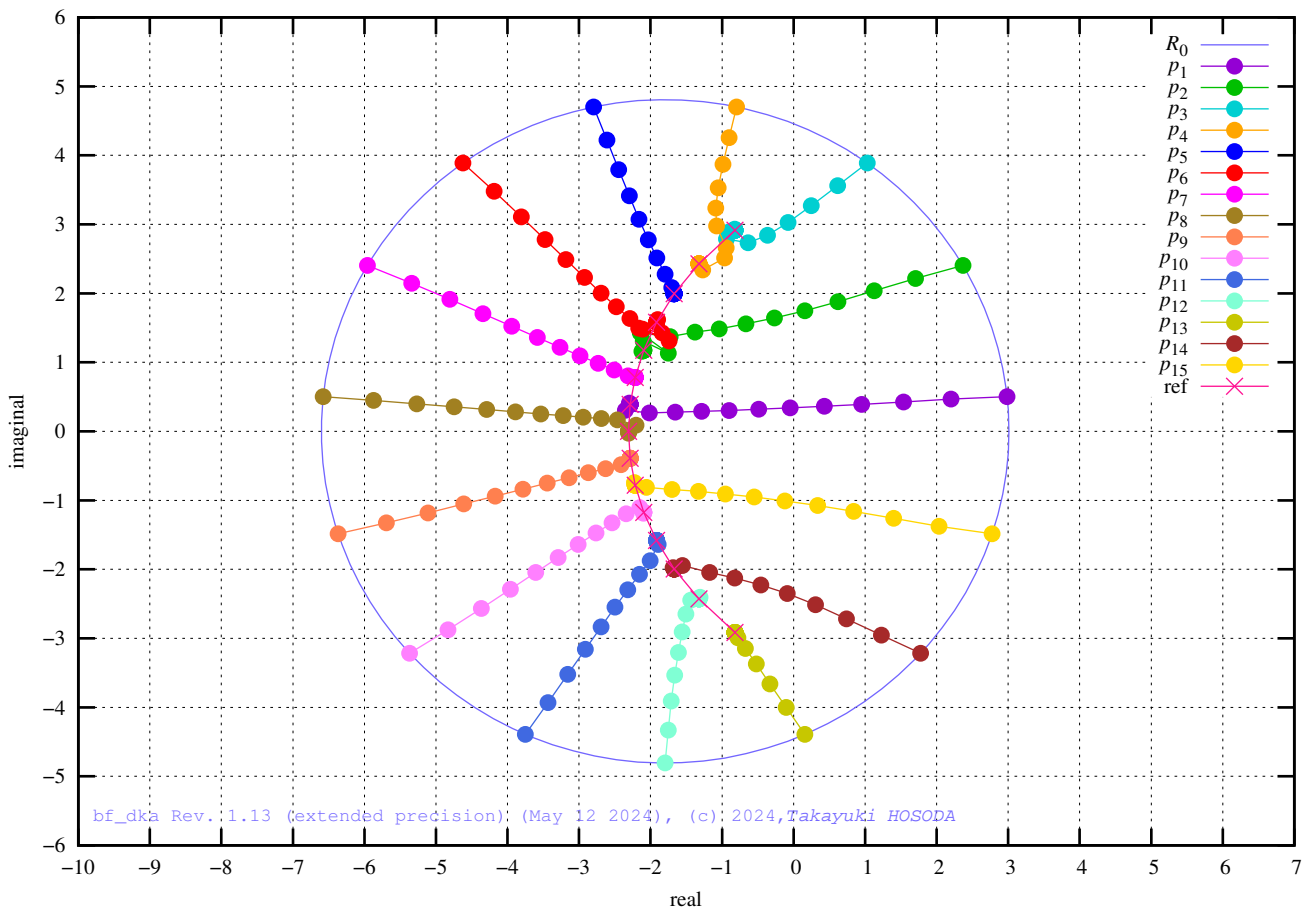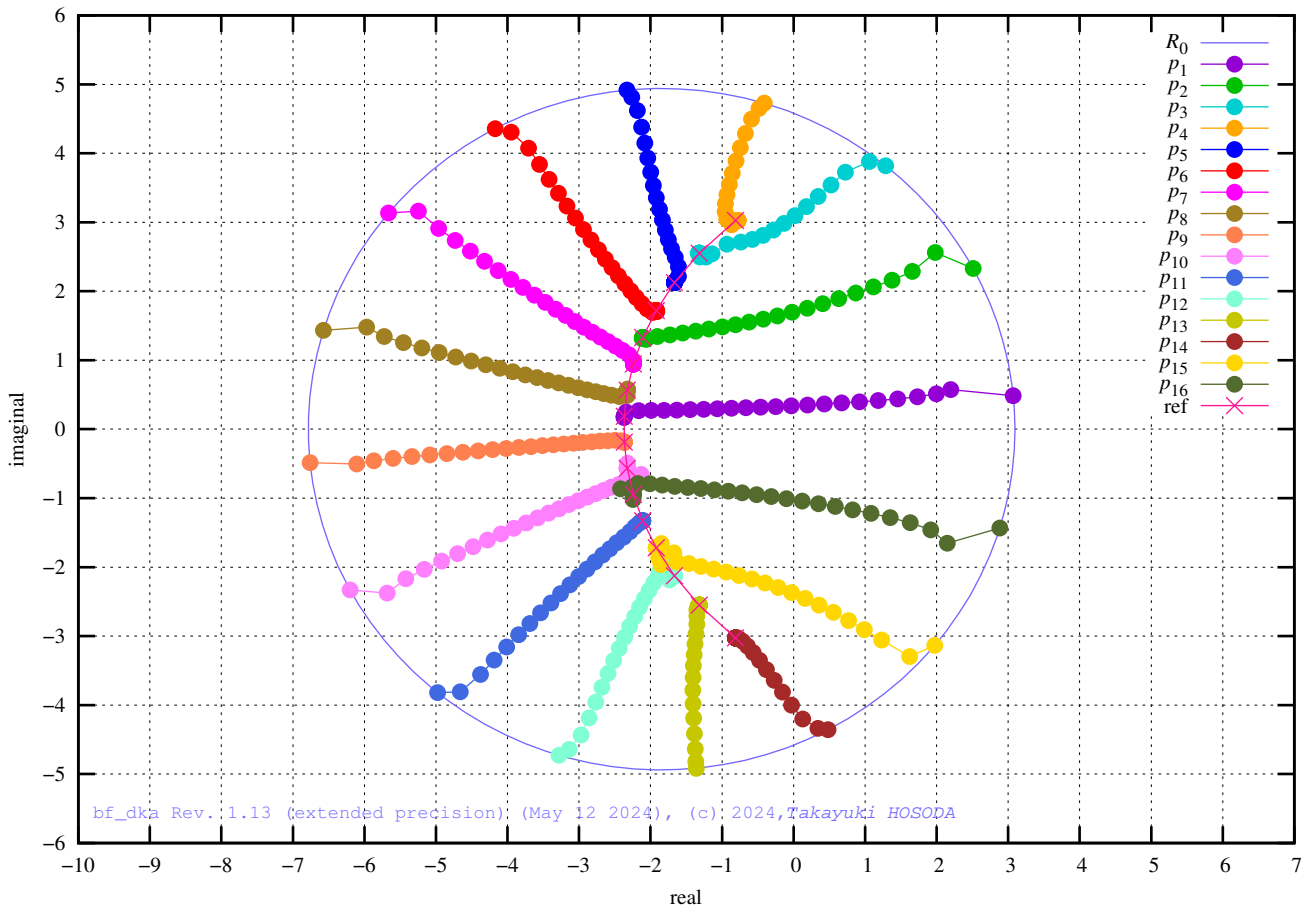
bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 15−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

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Finding all the poles of the 16−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.
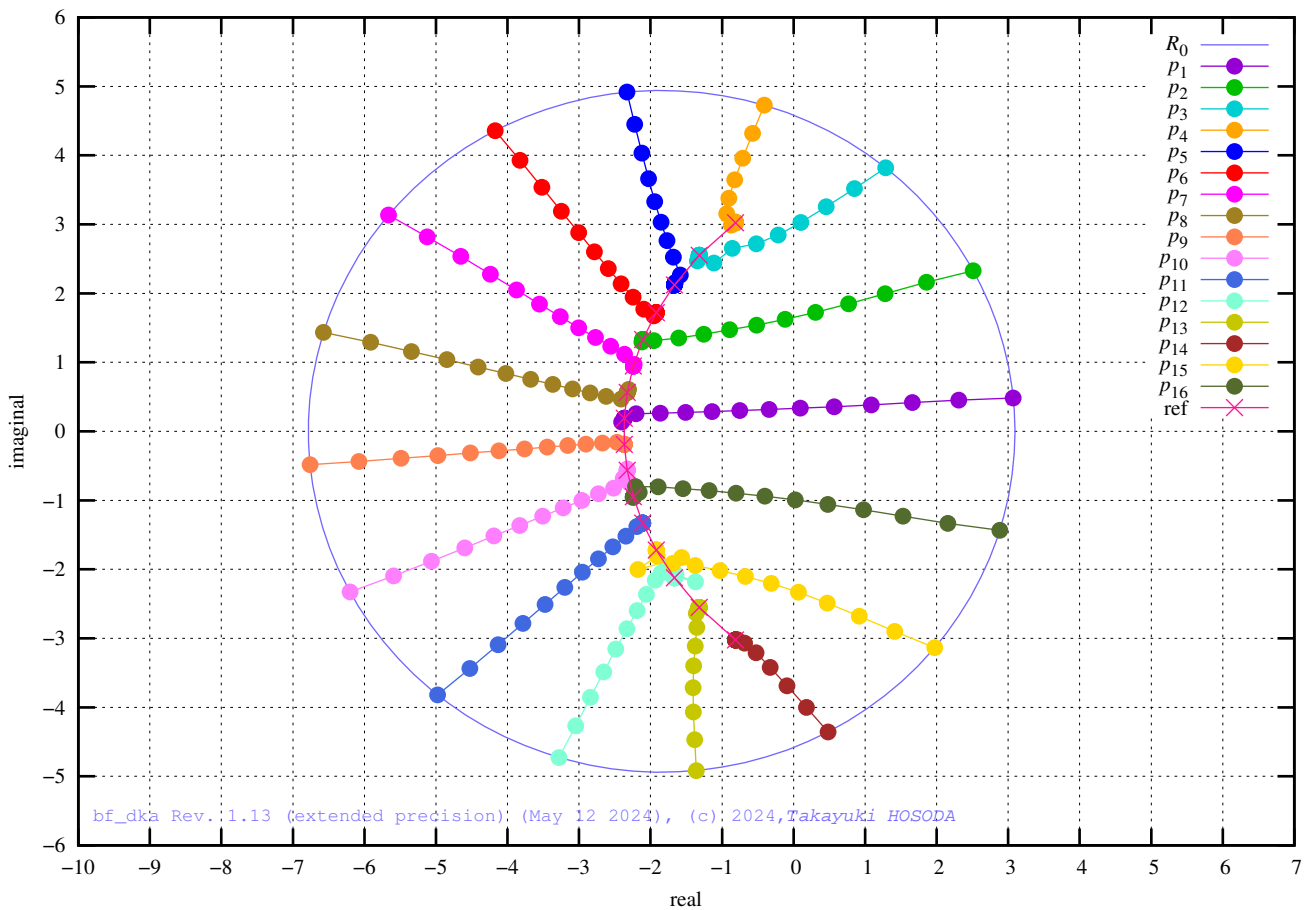
bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 16−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

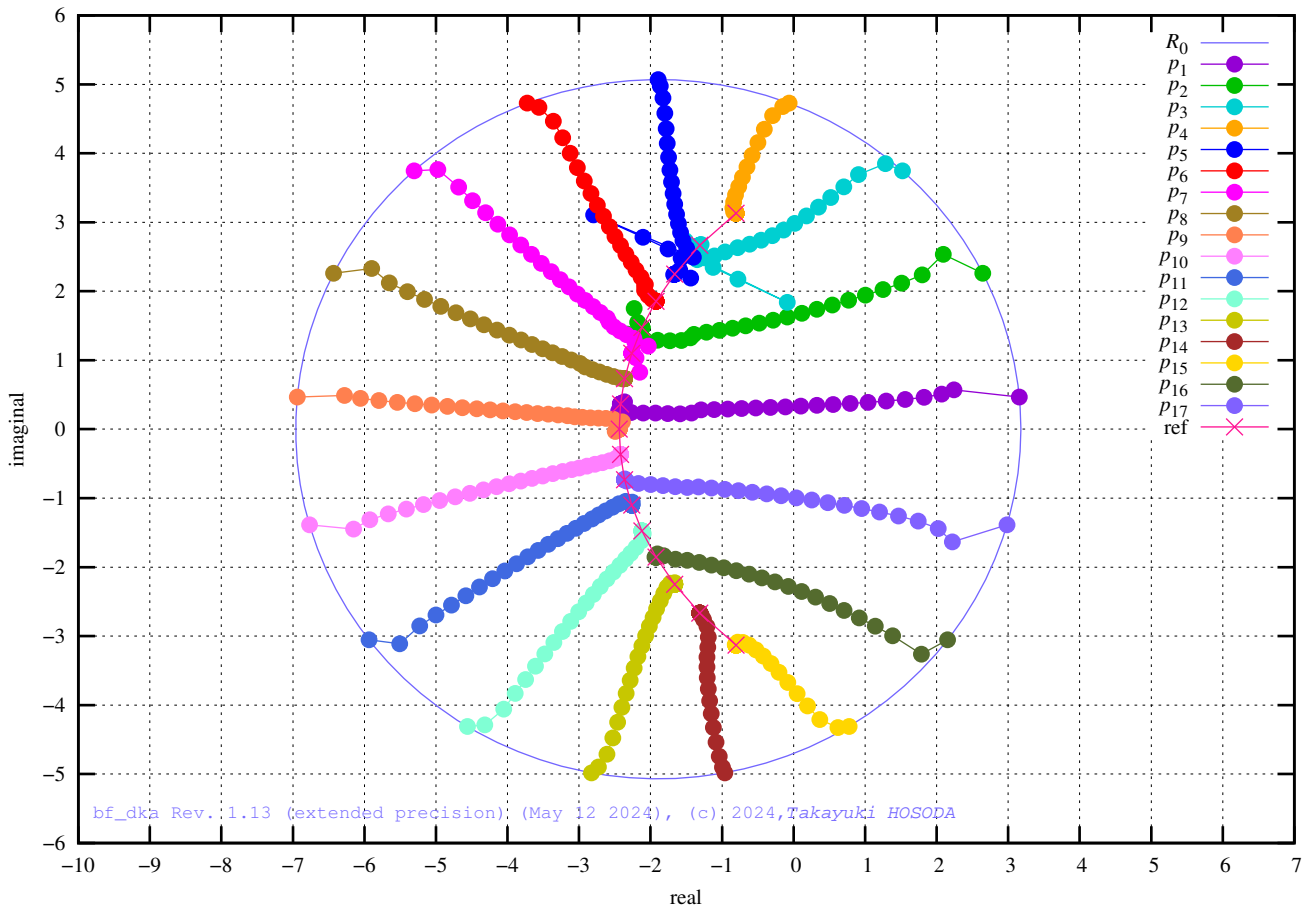bf_dka Rev. 1.13 (extended precision) (May 12 2024), (c) 2024,*Takayuki HOSODA*

Finding all the poles of the 17−th order normalized Bessel filter by the Durand−Kerner method of 2−nd order convergence with deceleration.

Finding all the poles of the 17−th order normalized Bessel filter by the Ehrlich−Aberth method of 3−rd convergence with deceleration.

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