

Linear Advance extrusion algorithm

Feature Name: Linear Advance Extrusion Algorithm

Feature Name in Annotation: LIN_ADVANCE

Source of Information

Releaselog, pull requests, commits, ifdefs with feature annotation name

Strategy Used:

Feature is identified from the latest release log first. The release log also provides the pull request and commits linked to the feature (see the links and tables below), Ifdefs are also used for speeding up feature location.

Feature Release Version: 1.1.0 - RC7

Time took to Identify and Locate the feature: 0.3 hour

Time took to Understand the Implementation: 1 hour

Feature Description:

This new algorithm improved the print quality of fast printing. The issue of the old algorithm is the fast printing will case the corners are not sharp and bleeding out. The root cause of the print quality issues is an improper pressure inside the nozzle. In a nutshell, LIN_ADVANCE enables a pressure control feature which sets the pressure inside the nozzle to the needed one according to the print speed. This way, bleeding edges and rough solid infill can be nearly eliminated.

Feature Information and Statistics:

PR No.	Merged Time	PR	Commits	Files	Line Added	Line deleted
#3676	14 Jun 2016	Advance extrusion algorithm – LIN_ADVANCE	5	8	210	44
#4035	14 Jun 2016	Patch LIN_ADVANCE to use code_value_float	1	2	2	2
#4040	14 Jun 2016	Follow-up the PR #3676(Advance extrusion algorithm – LIN_ADVANCE)	1	15	135	0

#4126	23 Jun 2016	Patch LIN_ADVANCE timing issue	1	1	13	11
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Ratios of sources (%)

RL	PR	CM	Ifdef	DK	CC	SC	GD
50	20	15	15	0	0	0	0

RL: Release Log; **PR:** Pull Request; **CM:** Commit, **Ifdef:** Ifdef Expression; **DK:** Domain Knowledge; **CC:** Code Comment; **SC:** Source Code; **GD:** G-Code Documentation.

Pull Request Links:

<https://github.com/MarlinFirmware/Marlin/pull/3676/files>
<https://github.com/MarlinFirmware/Marlin/pull/4035/files>
<https://github.com/MarlinFirmware/Marlin/pull/4040/files>
<https://github.com/MarlinFirmware/Marlin/pull/4126/files>

Feature Characteristics:

Feature Name	LoFC	SD	TD	Completely Wrapped by ifdef
Linear Advance Extrusion Algorithm	277	18	7	Yes

Feature's relevant historical data

Related Pull Request:

<https://github.com/MarlinFirmware/Marlin/pull/3655>