



SDI Review Form 1.6

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Type of the Article	Original Research Article

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	In line 131, the author states "Suppose $x*y = y$ and $y*x = x$." The author should deal with other cases, or (equivalently) state why such an assumption can be made. In line 83, the author states "either $x \in H$" but doesn't state what else might be possible (the "or ..."). A similar thing occurs in line 88. Definition 3.1 doesn't seem to be a definition. It is more like a proposition or a lemma. The author doesn't offer any proof or reference for the assertions made (Y1 through Y10). Definition 2.3 is also stated as a theorem. Perhaps "Let" should be deleted, "be" should be replaced by "is", and "for all should be preceded by "if and only if".	Thanks for pointing out this. In line 131 suppose $x * y = y$ iff $(x * y) * y = 1$, and suppose $y * x = x$ iff $(y * x) * x = 1$. In line 83 and line 88 Right. Thank you! ~~either~~ Definition 3.1 Right. But, typically, we used definition. Discovery: Page 2 have a repeat, that is, Definition 3.1(Y10) the same way as the Definition 2.3 (BCL^+_3). ~~(Y10)~~ $((x * y) * z) * ((x * z) * y) \leq (z * y) * x$. Definition 2.3 Definition 2.3 is the partially ordered forms of the Definition 2.1 Thank you again for your helpful suggestions.



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Minor REVISION comments	In line 20, “introduces” should perhaps be “introduced”. In line 22, “discuss” should perhaps be “discussed”. In line 24, “by” should perhaps be “using”. In line 26, “to”, “the” and the second “the” should perhaps be deleted. In line 35, “if” should perhaps be deleted. In line 36, “partially ordered set” should perhaps be “a partially ordered set”. In line 36, “of” should perhaps be “corresponding to the”. In line 38, “the ordering” should perhaps be “in this ordering.”. In line 48, “imply” should perhaps be “implies”. In line 59, “we” should perhaps be preceded by “and”. In line 61, “Where” should perhaps be “where”. In line 65, “, we” should perhaps be “. We”. In (Y1) of Definition 3.1, I don’t understand what is being said: do $x*x = 1$ and $1*x = x$ together imply that $x = 1$? Why is $x*x=1$ being stated, anyway—it’s part of the definition of a BCL⁺ algebra (see Definition 2.1). In line 89, “and” should perhaps be “for some”. In the first line of the proof of Theorem 3.2, “Let H be a filtration” has already been stated in the statement of the theorem, and “$a_1, a_2, \dots, a_i, \dots, a_n \in H$” should be moved to the statement of the theorem. In line 97, should “if and only if” by any chance be “such that”? In line 105 “We continue like this, in the “extreme” case implies” should perhaps be “If we continue like this, we obtain in the “extreme” case that”. In line 107, should perhaps “for all $x \in y$” be moved to after “If $a \leq x$,”? In line 111, “Suppose that” should perhaps be “Let”. Also in line 111, “Y, then” should perhaps be “Y. Then”. In line 116, “family filtrations” should perhaps be “family	Thanks for pointing out this. ----- In line 20, 22, 24, 26, 35, 36, 38, 48, 59, 61, 65. I have changed it as you suggest. ----- In (Y1) I have changed it as you suggest. (Y1) $x * x = 1, 1 * x = x \text{ imply } x = 1$. (Later in the study, I add $1 * x = x \text{ imply } x = 1$.) Thank you! Now, (Y10) $((x * y) * z) * ((x * z) * y) \leq (z * y) * x, 1 * x = x \text{ imply } x = 1$. ----- In line 89 and for all $x \in Y$ ----- Proof of Theorem 3.2 I guess so. ----- In line 97 Yes. ~~if and only if~~ such that ----- In line 105 I have changed it as you suggest. If we continue like this, we obtain in the “extreme” case that. This ratiocination proves that implies $x \in H$. ----- In line 107 , if where
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	of filtrations". In line 121, "filtrations" should perhaps be "a filtration". Also in line 121, I just can't understand what is being said after "then". In line 122, should "for some $x \in Y$" be inserted somewhere around "$a \leq x$"? In line 127, "If Y be commutative" is archaic. In line 141, why not start both equality chains with $(x*0)*0$? In line 145, perhaps either delete "the" or say "By the commutativity of Y" (if that is indeed what is meant). In line 171, "this conditions" should perhaps be "the conditions". $(0*x)*x = x$ is used in several places. I can't see where it's proved.	----- In line 111 Suppose that B is a subalgebra of Y. Then ----- In line 116 I have changed it as you suggest. ----- In line 121 I have changed it as you suggest. ----- In line 122 I think so. ----- In line 127 I have changed it as you suggest. ----- In line 145 I have changed it as you suggest. ~~By the commutativity,~~ ----- In line 171 I have changed it as you suggest. ----- Thank you again for your helpful suggestions.
Optional/General comments	I can't really evaluate many of the statements because I don't understand what is being said. (See line 121, for example.)	You've form opinions that had some value. Thank you!