

Review Form 1.6

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| Journal Name: | International Astronomy and Astrophysics Research Journal |
| Manuscript Number: | Ms_IAARJ_87547 |
| Title of the Manuscript: | ON COMPACT STEEP SPECTRUM RADIO QUASARS/GALAXIES AND YOUTH SCENARIO |
| Type of the Article | ORIGINAL RESEARCH ARTICLE |

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journaliaarj.com/index.php/IAARJ/editorial-policy>)

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) |
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| <u>Compulsory</u> REVISION comments | <p>CRc1) As known, in the linear regression analysis it is assumed that the <i>cause-and-effect</i> relationship between the variables remains unchanged. In the present work these variables correspond to the observed source linear sizes and their respective observed redshifts for the quasars and the galaxies. This is a strong assumption. Indeed, this hypothesis may not hold good during the evolution and, hence, estimation of the values of a variable made on the basis of the regression equation may lead to erroneous and misleading results. For clarity, in my opinion the author should mention this issue.</p> <p>CRc2) Another issue that deserves deep discussion is the extent of the errors. As known, experimental data in the <i>size/redshift plane</i> or in the <i>size/luminosity plane</i> are quite prone to noise and overfitting. The author is invited to include the estimation of the errors in the D-z and the D-P plots for the quasars and the CSS galaxies.</p> <p>CRc3) The main conclusion of this work is that "<i>while CSS galaxies is besieged with progressive dynamical evolution, CSS quasars suffer retrogressive dynamical evolution</i>". This conclusion seems not to be in line with the current opinion according to which the majority of CSSs are likely to be young sources advancing outward through an asymmetric, inhomogeneous environment to form the larger ones. The radio properties of the CSSs are consistent with the unified scheme, where the axes of the quasars are seen closer to the line of sight while the radio galaxies lie closer to the plane of the sky. Author is asked to clarify this aspect.</p> <p>CRc4) This work reports the scatter plots of the linear size vs redshift and vs observed luminosity for the CSS quasars and the CSS radio galaxies. However, to carry out a more exhaustive investigation it would have been useful to provide also the plots relating to the projected linear size vs the misalignment angle. May the author provide the above plots for both the CSS quasars and the CSS radio galaxies?</p> <p>CRc5) <i>This question is linked to the previous one.</i></p> <p>As known, 7% of the active galactic nuclei (AGN) are radio-loud and often show a flat radio-spectrum (F-NLS1s). An important aspect of these AGN is the nature of their "parent population", i.e., how do they appear when observed under different angles. Currently, it is proposed that a specific class of radio-galaxies, compact-steep sources (CSS) can represent the parent population of F-NLS1s. Has the author studied this important aspect? If so, the author is asked to provide his opinion on the matter.</p> | The necessary corrections have been effected. |
| <u>Minor</u> REVISION comments | <p>MRc1) The author is advised to complete their statistical method of analyses by providing an estimate of the errors and explaining why, from the physical point of view, the linear regression hypothesis should remain valid during evolution of the CSS quasars and the CSS galaxies.</p> <p>MRc2) The work should be better framed within works in the field that have recently appeared in the literature. The suggestions mentioned in the above Section "Compulsory Revision comments" are intended to help the author fill in some gaps.</p> <p>MRc3) The references cited in this work are not exhaustive and the list of works should be completed (suggestions CRc3-CRc5) may help in this regard).</p> | The necessary corrections have been effected. |
| <u>Optional/General</u> comments | The work is interesting and challenging. However, there are some aspects that need to be clarified. Furthermore, the author is encouraged to take into account the suggestions CRc3) -CRc5) above. Answering these questions will, in my opinion, improve the soundness of the work and will attract the reader's interest more. | The necessary corrections have been effected. |

PART 2:

| | 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) |
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| Are there ethical issues in this manuscript? | (If yes, Kindly please write down the ethical issues here in details) | |