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Title: Allocation of the epidermis to stomata relates to stomatal physiological control: stomatal factors involved in the evolutionary diversification of the angiosperms and development of amphistomaty

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## ACCEPTED MANUSCRIPT

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## Highlights

- The number and size of stomata over a leaf surface determines potential gas exchange.
- Optimal allocation of the epidermis to stomata  $(EP_{\%})$  has influenced plant evolution.
- The velocity of stomatal conductance  $(G_s)$  adjustment was positively related to  $EP_{\%}$ .
- Velocity of *G*<sub>s</sub> adjustment also correlated to occurrence of hypostomaty/amphistomaty.
- Low [CO<sub>2</sub>] favours angiosperms with increased *EP*<sup>%</sup> and velocity of *G*<sup>s</sup> adjustment.

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