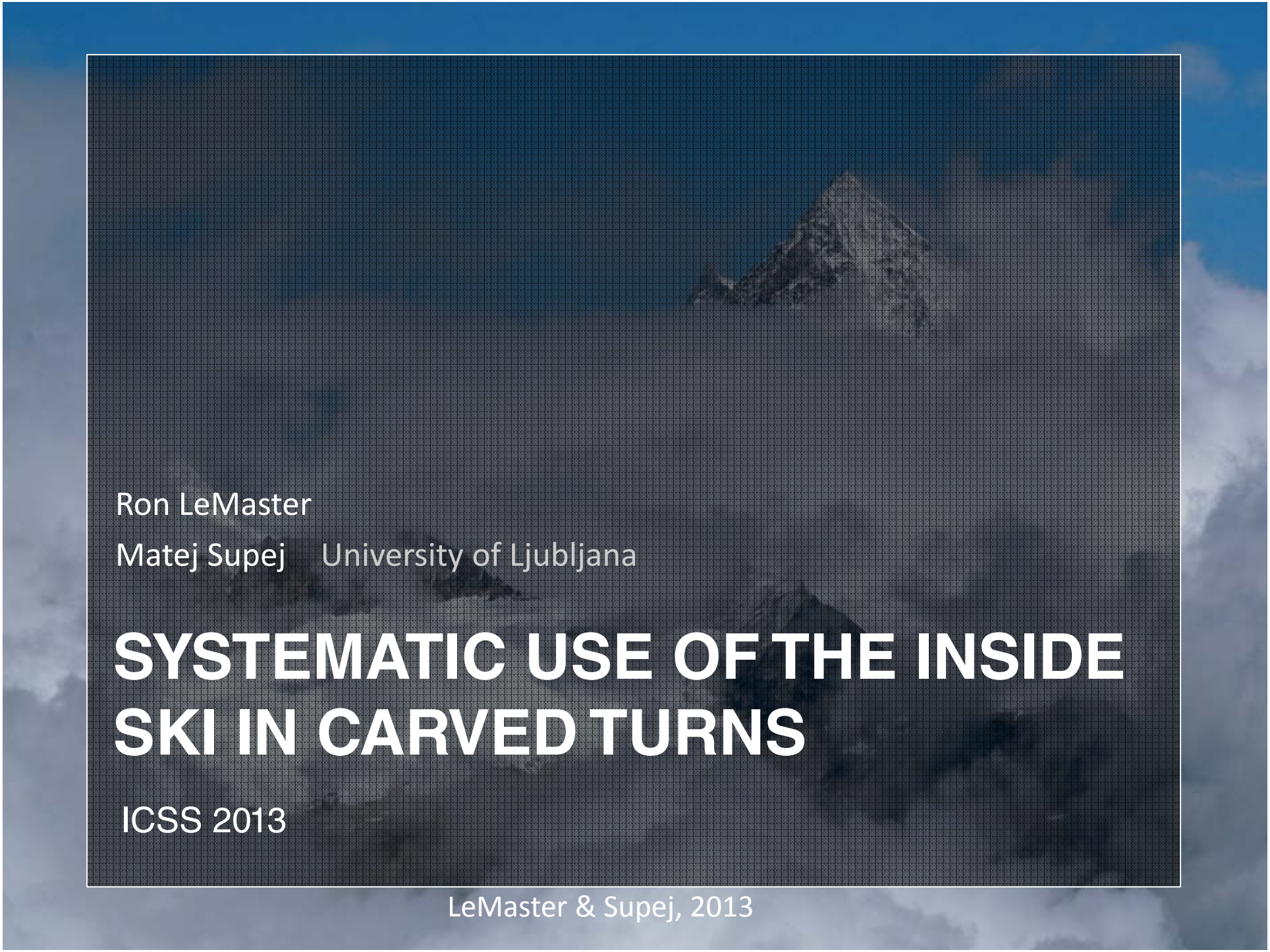


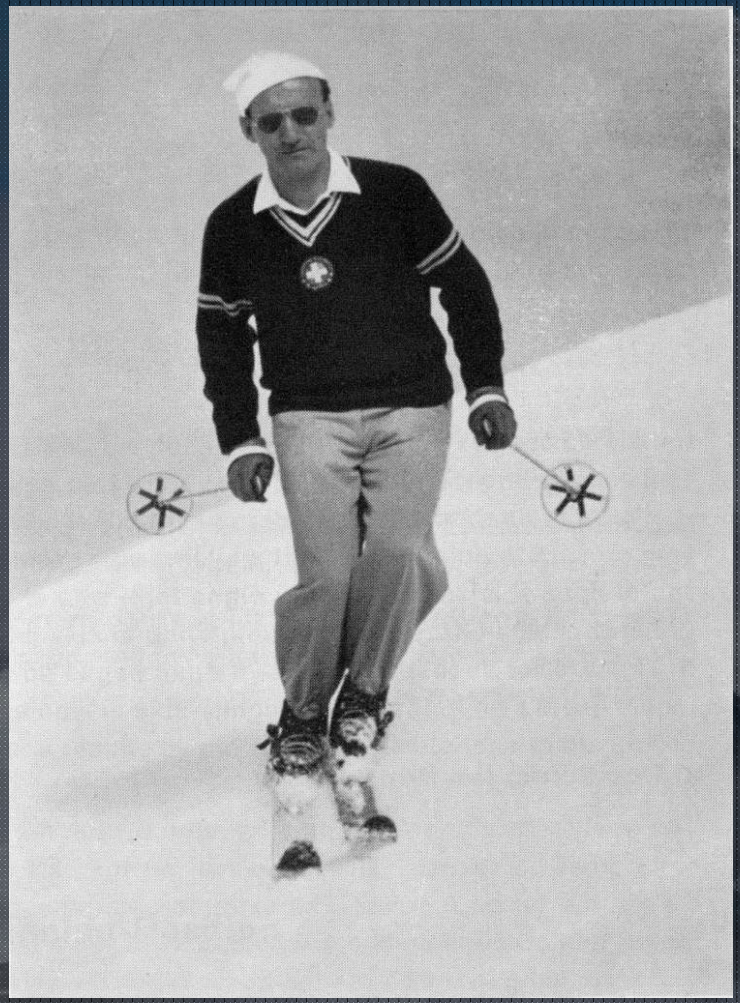
Ron LeMaster

Matej Supej University of Ljubljana

SYSTEMATIC USE OF THE INSIDE SKI IN CARVED TURNS

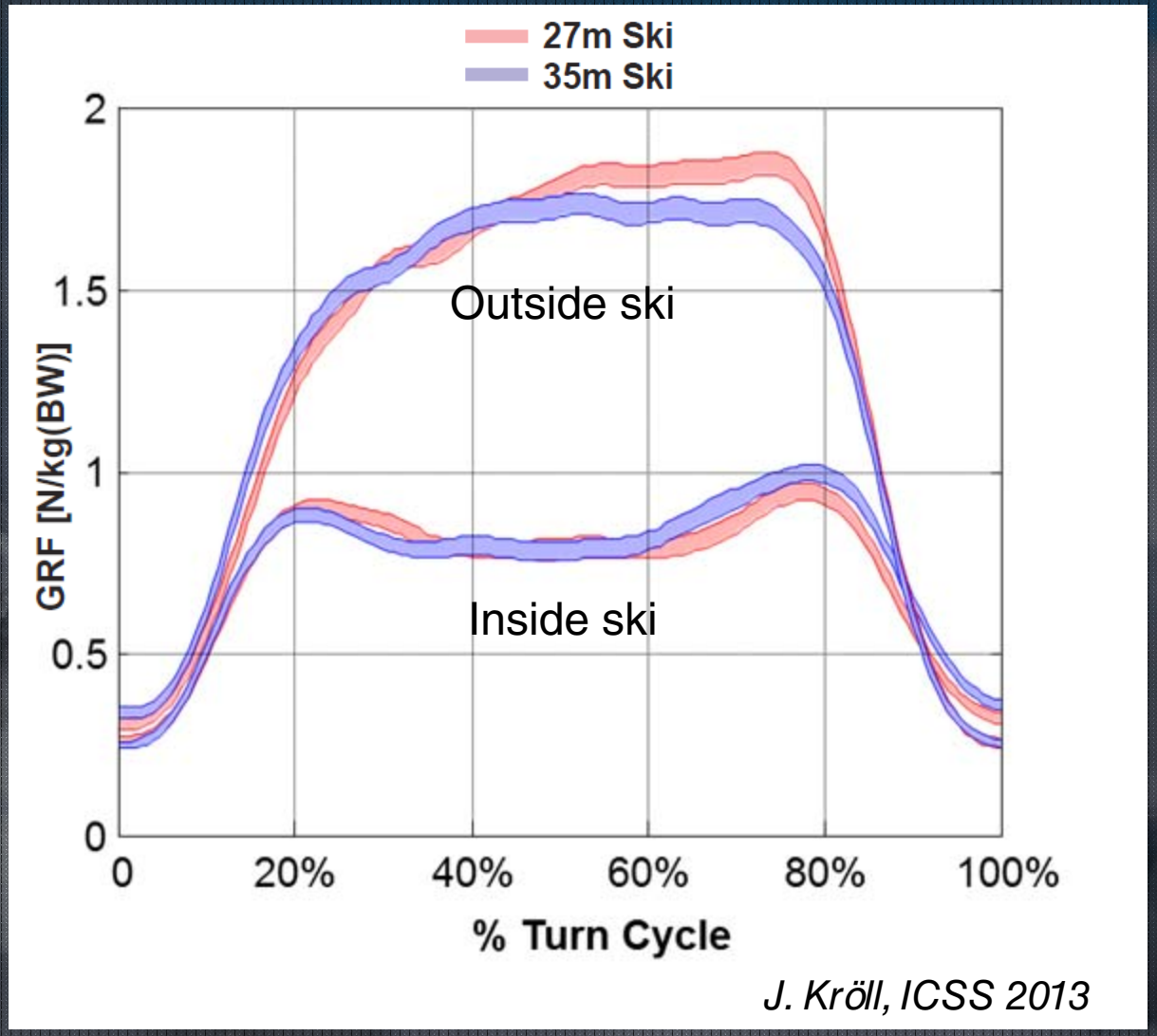
ICSS 2013

"Stand on the Outside Ski!"



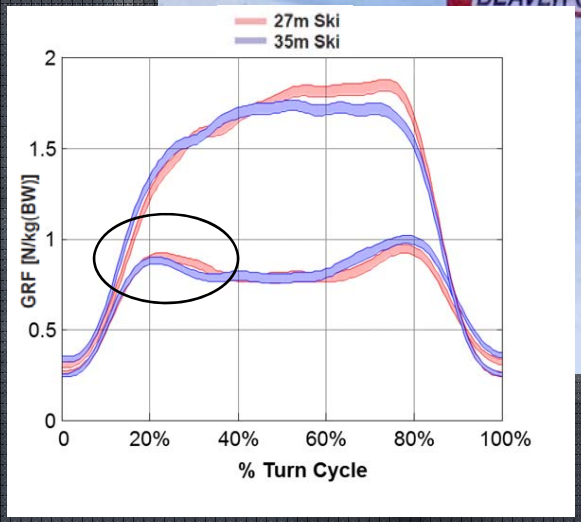
LeMaster & Supej, 2013

Empirical Evidence



J. Kröll, ICSS 2013

LeMaster & Supej, 2013



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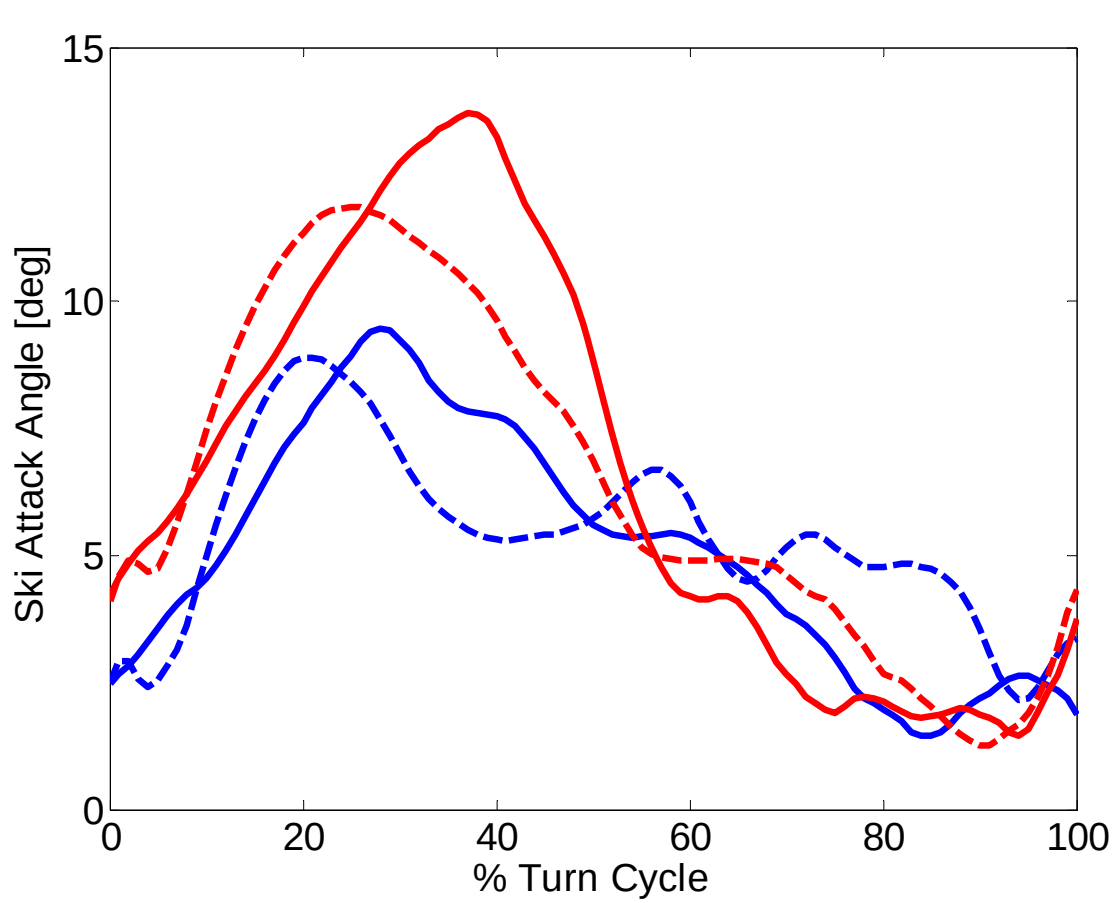
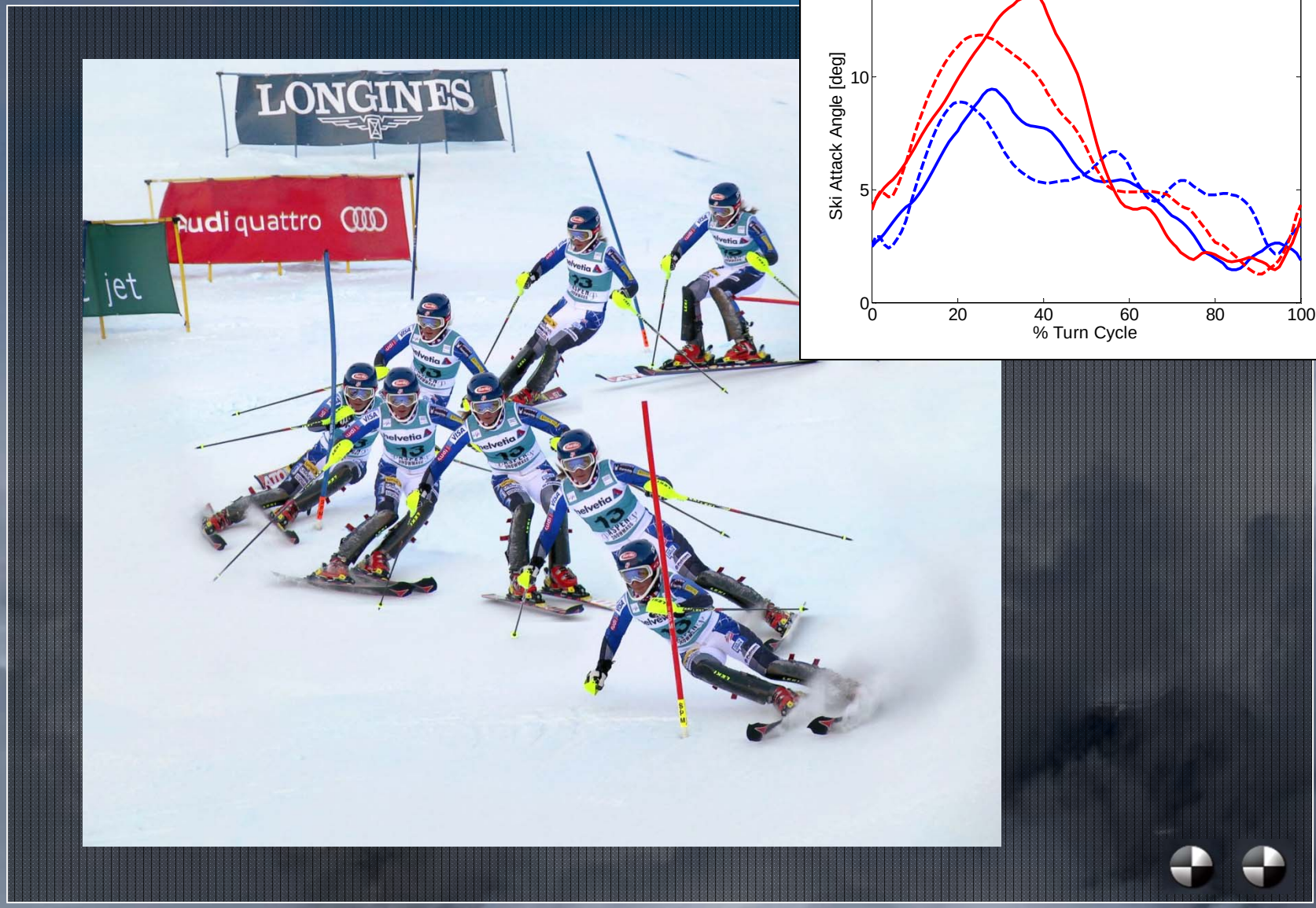
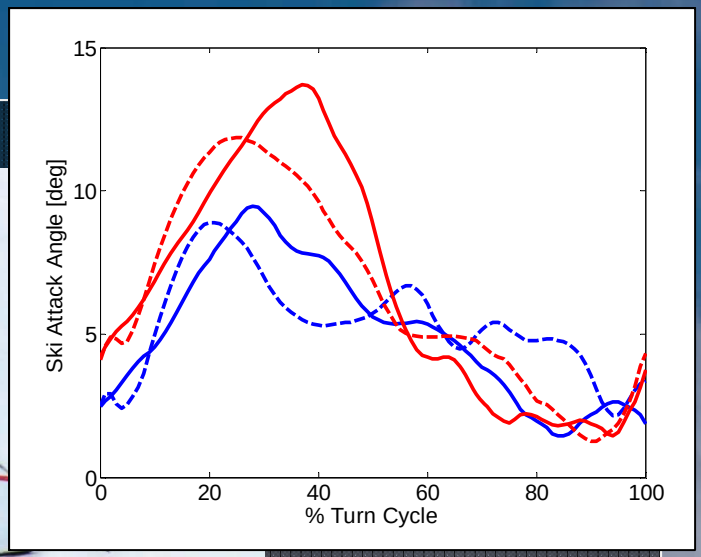
Ski Attack Angles



R. Reid, personal communication, 2009

LeMaster & Supej, 2013





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Why?

- Not simply a correction for tactical errors
- Enables
  - Carving smaller radius turn
  - Carving earlier in the turn
- “Arcing the whole turn”

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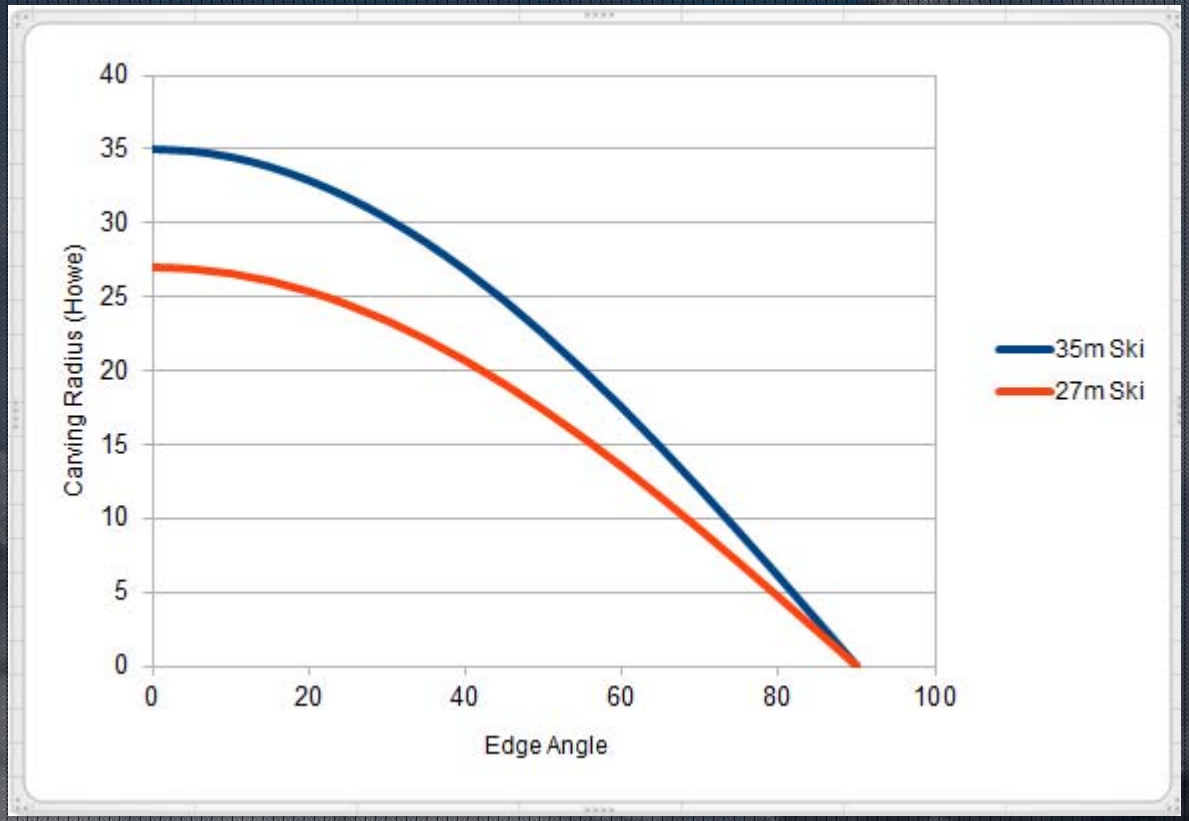
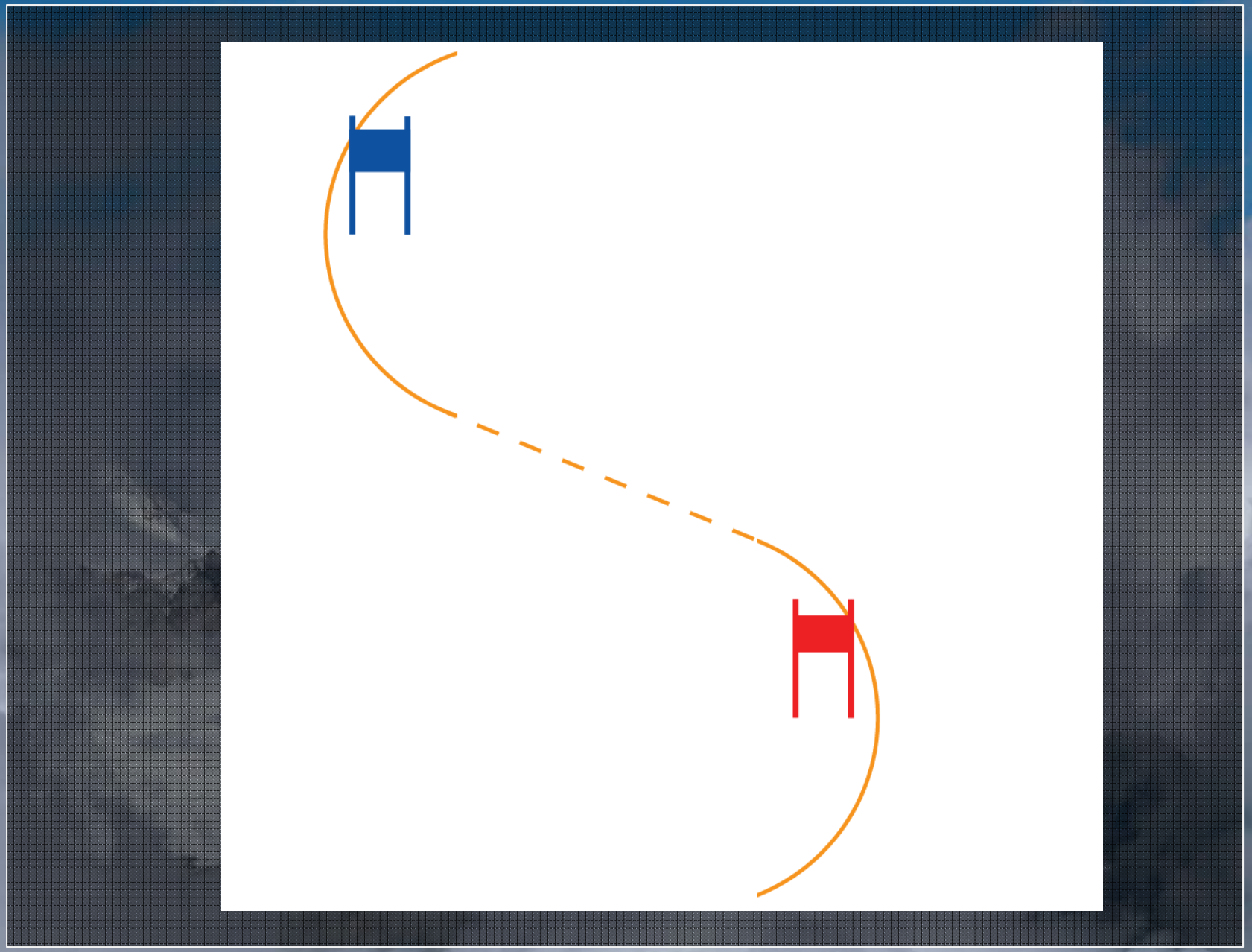
Howe's Basic Relation



$$r_{carving} = r_{sidecut} \cdot \cos\theta_{edge}$$

LeMaster & Supej, 2013



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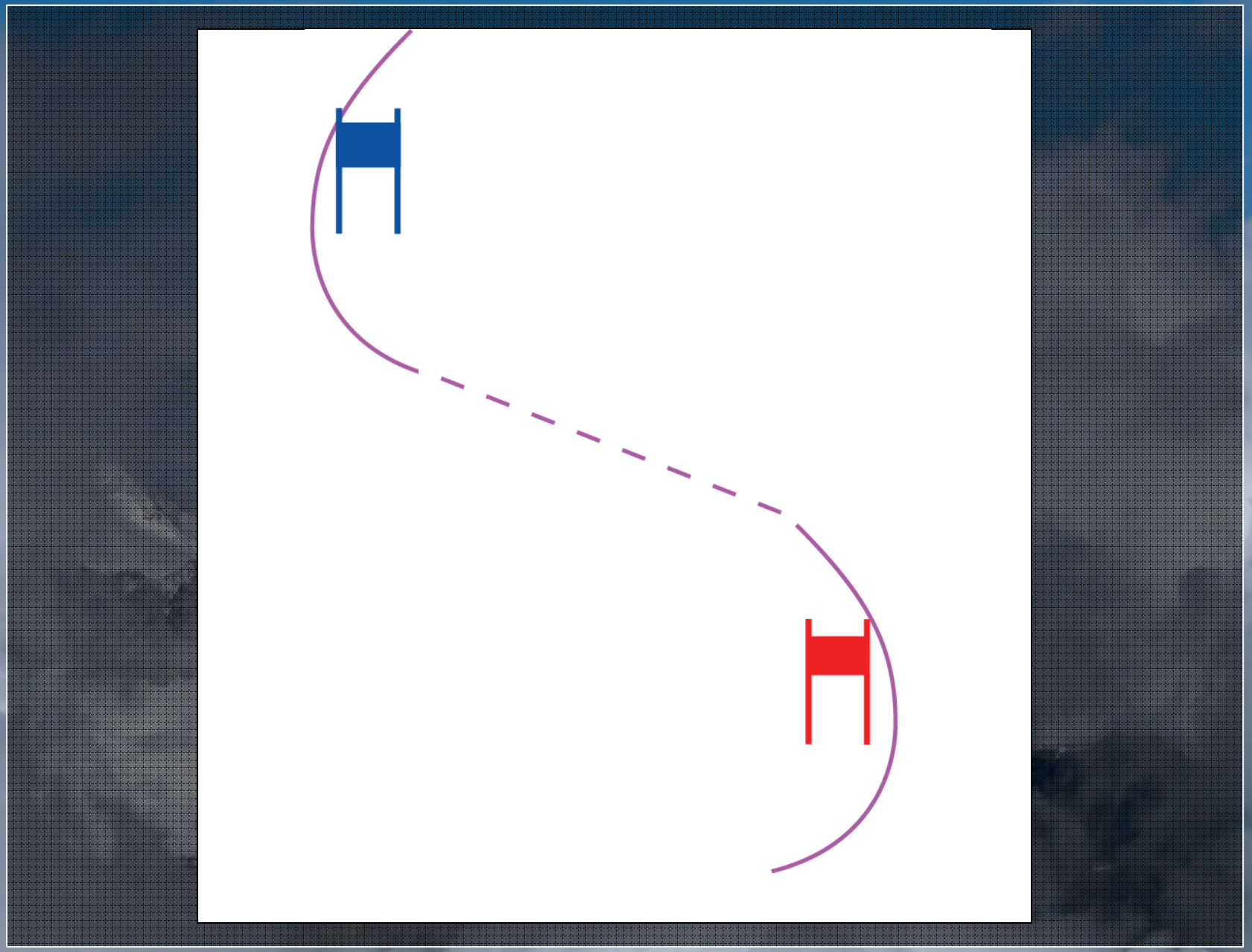

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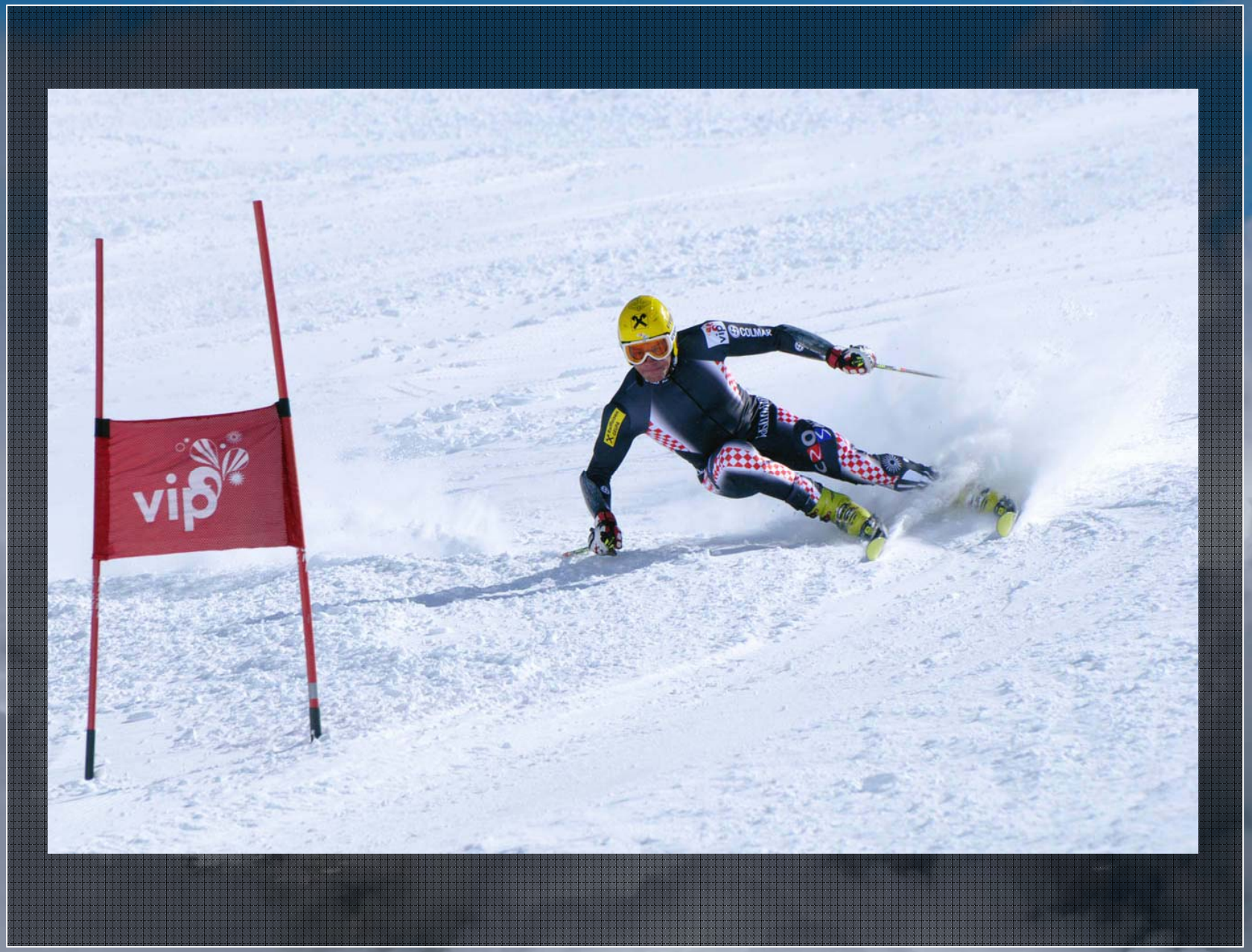
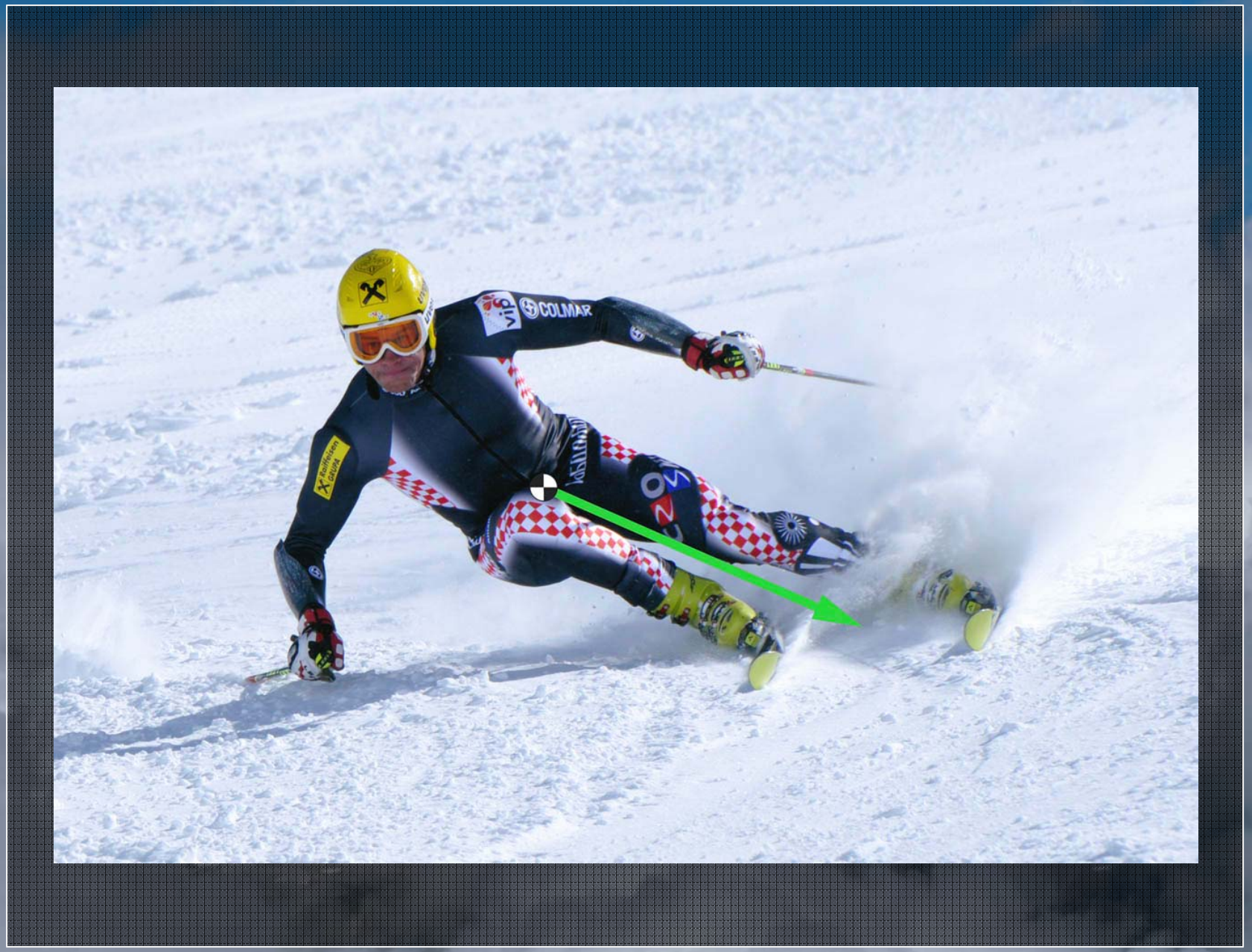


LeMaster & Supej, 2013



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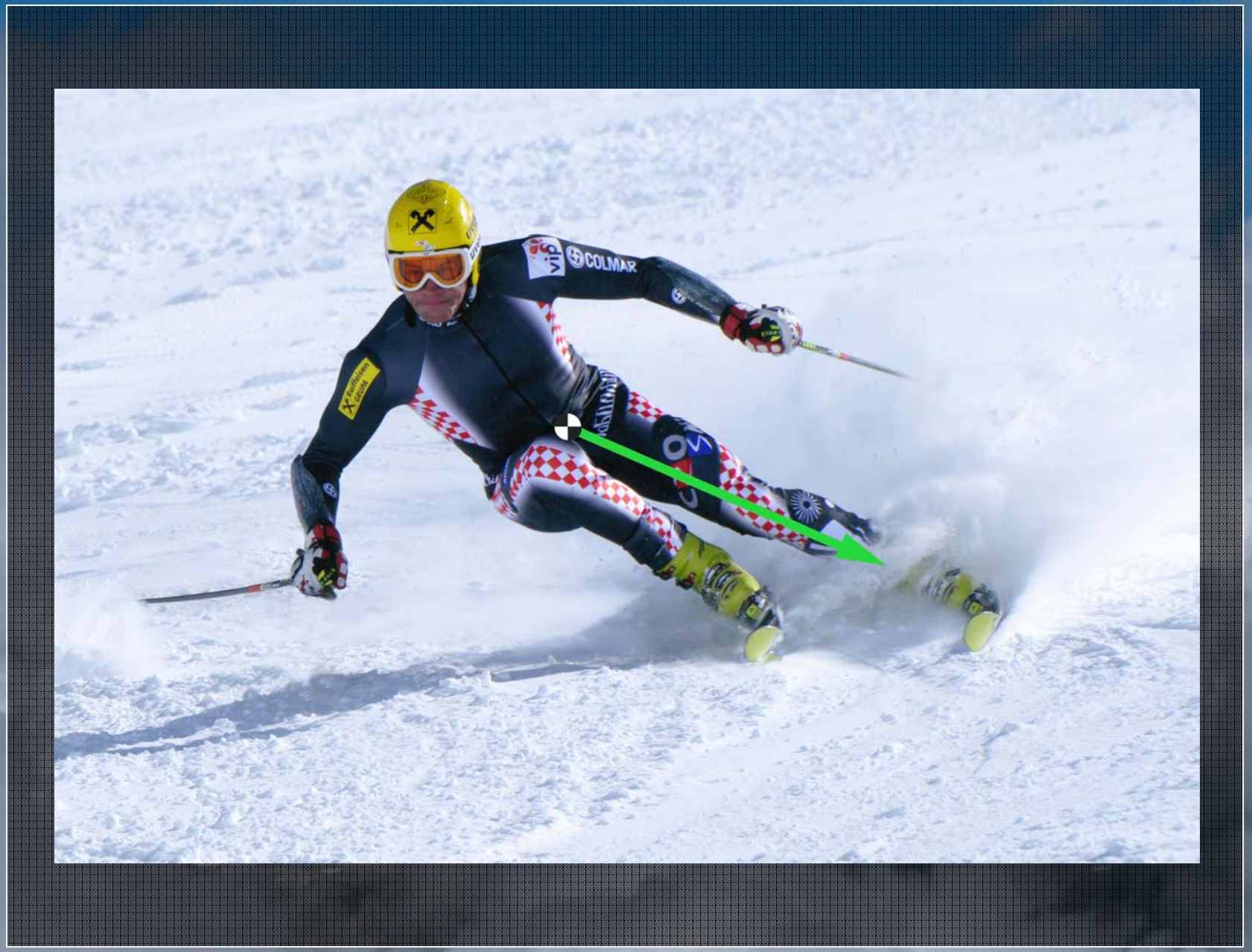

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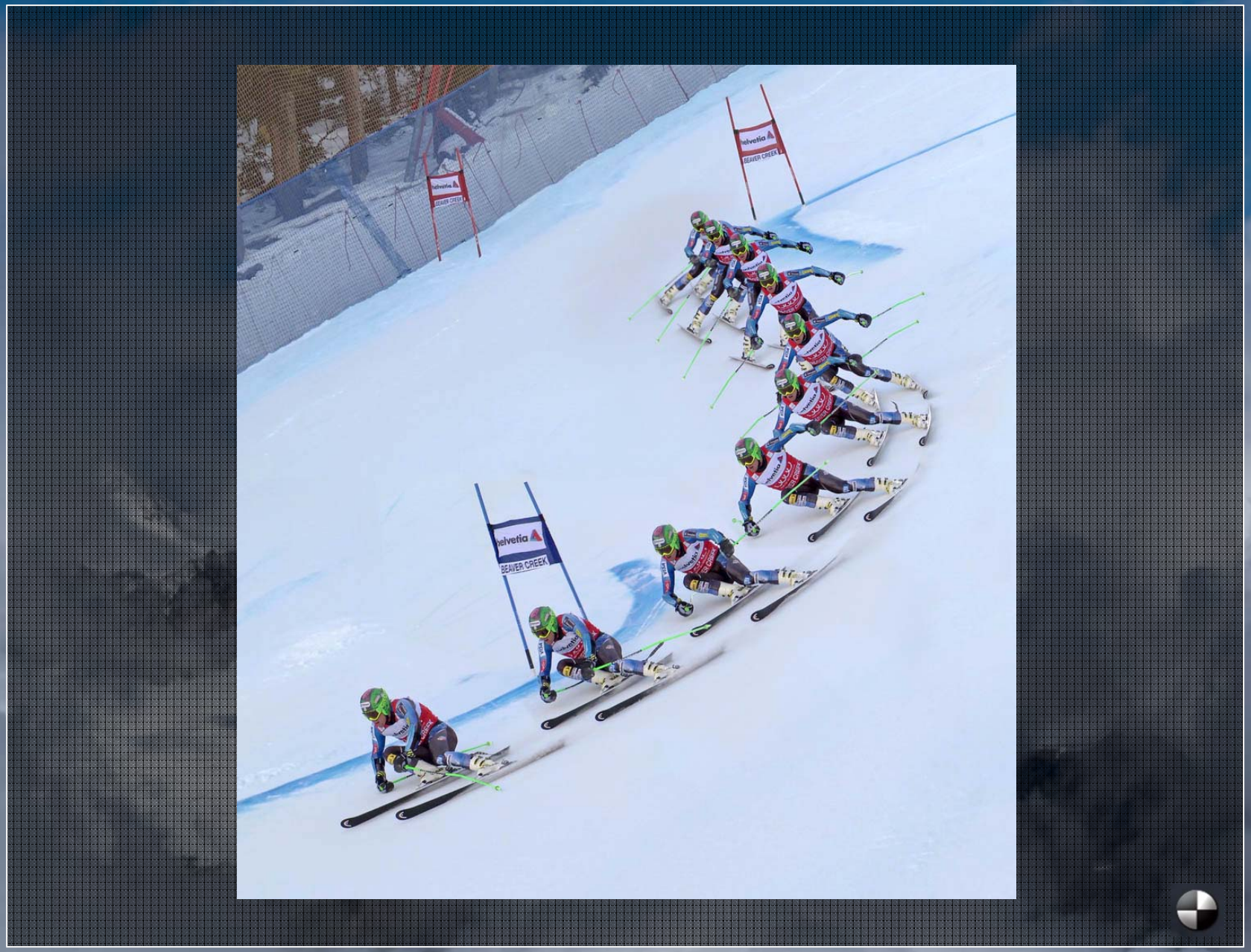

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Limitations

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To Carve Tightest Turn

- Achieve highest possible edge angle on outside ski
- Put sufficient force on outside ski to make it cut the snow, hold, and bend
- Put the rest of the force on the inside ski

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Conclusion

- Inside ski is used as vertical support, particularly in the first half of the turn
- Outside ski turns itself due to high edge angle enabled by support of inside ski
- Pressure on the outside ski comes from radial force, not gravity


Thanks for your attention!
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