EXERCISE 8

1. Selection

(a) What are three general benefits of selection by IntenSelect over selection by ray casting?

(b) Name a situation where ray casting should still be preferred over IntenSelect.

(c) The first approach for determining the score contribution of an IntenSelect handle was

$$s_{contrib} = 1 - \frac{a}{\beta_{cone}} \quad .$$

Explain why this formula was changed to

$$s_{contrib} = 1 - \frac{\text{atan}\left(\frac{d_{perp}}{d_{proj}^k}\right)}{\beta_{cone}}$$

in the second approach.
What are the benefits of the new formula and what is adjusted by changing k?

(d) Describe the effects of *stickiness* and *snappiness* of IntenSelect.

2. Redirected Walking

(a) Design an infinitely long virtual path and show that by using Redirected Walking, the path can be traversed using a finite real tracking area.
Use the following:

- Use only rotation gains between 0.8 and 1.2 (no translation or curvature gains).
- Fit the path into a real area of 4m×4m.
- The rotation gain can be changed instantly and as often as necessary.
- Choose the starting point within the real tracking space freely.

Sketch both the virtual and the real path. Stop as soon as a repetition becomes clear.

(b) Indicate at least two problems that can be expected to arise with your plan in practice.

Prof. Dr. Torsten W. Kuhlen <kuhlen@vr.rwth-aachen.de>
Dr. Tom Vierjahn <vierjahn@vr.rwth-aachen.de>

1 / 1