**Electronic Supplementary Material**

for

**Blood-seeking female horseflies prefer vessel-imitating temperature gradients on host-mimicking black targets: experimental corroboration of a new explanation of the visual unattractiveness of zebras to tabanids**

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This file contains the following: Supplementary Tables S1, S2, S3, S4, S5, S6

**Supplementary Table S1:** Times *t* (second) spent by tabanids walking on the wireless (*t*wireless) and wired (*t*wired) areas of the horizontal plane test surface in field experiment 1 when the underlying wire was heated or unheated on each experimental day. Relative times: τwireless = *t*wireless/(*t*wireless+*t*wired), τwired = *t*wired/(*t*wireless+*t*wired). Relative-area-normalized relative times: *Q*wireless = τwireless/*A*wireless, *Q*wired = τwired/*A*wired, where *A*wireless = 94 % is the relative area of the test surface without underlying wire, and *A*wired = 6 % is the relative area of the surface with underlying wire. s.d.: standard deviation.

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| **Experiment 1**  **Horizontal plane test surface (*A*wireless = 94 %, *A*wired = 6 %)** | | | | |
|  | **Heated wire** | | **Unheated wire** | |
| **Experimental**  **day (2022)** | **Wireless**  **area** | **Wired**  **area** | **Wireless**  **area** | **Wired**  **area** |
| **3 July** | *t*wireless = 2321 s  τwireless = 92.99 %  *Q*wireless = 0.989 | *t*wired = 175 s  τwired = 7.01 %  *Q*wired = 1.169 | *t*wireless = 2911 s  τwireless = 93.69 %  *Q*wireless = 0.997 | *t*wired = 196 s  τwired = 6.31 %  *Q*wired = 1.051 |
| **8 July** | *t*wireless = 2116 s  τwireless = 94.80 %  *Q*wireless = 1.009 | *t*wired = 116 s  τwired = 5.20 %  *Q*wired = 0.866 | *t*wireless = 2791 s  τwireless = 96.21 %  *Q*wireless = 1.023 | *t*wired = 110 s  τwired = 3.79 %  *Q*wired = 0.632 |
| **14 July** | *t*wireless = 1996 s  τwireless = 94.73 %  *Q*wireless = 1.008 | *t*wired = 111 s  τwired = 5.27 %  *Q*wired = 0.878 | *t*wireless = 2301 s  τwireless = 94.46 %  *Q*wireless = 1.005 | *t*wired = 135 s  τwired = 5.54 %  *Q*wired = 0.924 |
| **21 July** | *t*wireless = 1615 s  τwireless = 93.73 %  *Q*wireless = 0.997 | *t*wired = 108 s  τwired = 6.27 %  *Q*wired = 1.045 | *t*wireless = 2815 s  τwireless = 95.07 %  *Q*wireless = 1.011 | *t*wired = 146 s  τwired = 4.93 %  *Q*wired = 0.822 |
| **28 July** | *t*wireless = 1302 s  τwireless = 92.87 %  *Q*wireless = 0.988 | *t*wired = 100 s  τwired = 7.13 %  *Q*wired = 1.189 | *t*wireless = 1538 s  τwireless = 93.33 %  *Q*wireless = 0.993 | *t*wired = 110 s  τwired = 6.67 %  *Q*wired = 1.112 |
| **2 August** | *t*wireless = 1240 s  τwireless = 92.33 %  *Q*wireless = 0.982 | *t*wired = 103 s  τwired = 7.67 %  *Q*wired = 1.278 | *t*wireless = 1519 s  τwireless = 93.59 %  *Q*wireless = 0.996 | *t*wired = 104 s  τwired = 6.41 %  *Q*wired = 1.068 |
| **8 August** | *t*wireless = 755 s  τwireless = 90.64 %  *Q*wireless = 0.964 | *t*wired = 78 s  τwired = 9.36 %  *Q*wired = 1.561 | *t*wireless = 1410 s  τwireless = 94.44 %  *Q*wireless = 1.005 | *t*wired = 83 s  τwired = 5.56 %  *Q*wired = 0.927 |
| **Total** | *t*wireless = 11345 s  τwireless = 93.48 % | *t*wired = 791 s  τwired = 6.52 % | *t*wireless = 15285 s  τwireless = 94.53 % | *t*wired = 884 s  τwired = 5.47 % |
| **Mean**  **± s. d.** | **τwireless = 93.16**  **± 1.45 %**  ***Q*wireless = 0.991**  **± 0.015** | **τwired = 6.84**  **± 1.45 %**  ***Q*wired = 1.141**  **± 0.242** | **τwireless = 94.40**  **± 1.00 %**  ***Q*wireless = 1.004**  **± 0.011** | **τwired = 5.60**  **± 1.00 %**  ***Q*wired = 0.934**  **± 0.167** |

**Supplementary Table S2:** Times *t* (second) spent by tabanids walking on the wireless (*t*wireless) and wired (*t*wired) areas of the 60o-tilted plane test surface in field experiment 2 when the underlying wire was heated or unheated on each experimental day. Relative times: τwireless = *t*wireless/(*t*wireless+*t*wired), τwired = *t*wired/(*t*wireless+*t*wired). Relative-area-normalized relative times: *Q*wireless = τwireless/*A*wireless, *Q*wired = τwired/*A*wired, where *A*wireless = 94 % is the relative area of the test surface without underlying wire, and *A*wired = 6 % is the relative area of the surface with underlying wire. s.d.: standard deviation.

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| **Experiment 2**  **60o-tilted plane test surface (*A*wireless = 94 %, *A*wired = 6 %)** | | | | |
|  | **Heated wire** | | **Unheated wire** | |
| **Experimental**  **day (2022)** | **Wireless**  **area** | **Wired**  **area** | **Wireless**  **area** | **Wired**  **area** |
| **4 July** | *t*wireless = 1628 s  τwireless = 82.31 %  *Q*wireless = 0.876 | *t*wired = 350 s  τwired = 17.69 %  *Q*wired = 2.949 | *t*wireless = 2823 s  τwireless = 92.89 %  *Q*wireless = 0.988 | *t*wired = 216 s  τwired = 7.11 %  *Q*wired = 1.185 |
| **10 July** | *t*wireless = 1410 s  τwireless = 84.23 %  *Q*wireless = 0.896 | *t*wired = 264 s  τwired = 15.77 %  *Q*wired = 2.628 | *t*wireless = 2907 s  τwireless = 95.69 %  *Q*wireless = 1.018 | *t*wired = 131 s  τwired = 4.31 %  *Q*wired = 0.719 |
| **17 July** | *t*wireless = 1372 s  τwireless = 81.96 %  *Q*wireless = 0.872 | *t*wired = 302 s  τwired = 18.04 %  *Q*wired = 3.007 | *t*wireless = 2131 s  τwireless = 93.38 %  *Q*wireless = 0.993 | *t*wired = 151 s  τwired = 6.62 %  *Q*wired = 1.103 |
| **23 July** | *t*wireless = 851 s  τwireless = 77.93 %  *Q*wireless = 0.829 | *t*wired = 241 s  τwired = 22.07 %  *Q*wired = 3.678 | *t*wireless = 2581 s  τwireless = 94.06 %  *Q*wireless = 1.000 | *t*wired = 163 s  τwired = 5.94 %  *Q*wired = 0.990 |
| **30 July** | *t*wireless = 787 s  τwireless = 78.94 %  *Q*wireless = 0.840 | *t*wired = 210 s  τwired = 21.06 %  *Q*wired = 3.511 | *t*wireless = 1714 s  τwireless = 93.00 %  *Q*wireless = 0.989 | *t*wired = 129 s  τwired = 7.00 %  *Q*wired = 1.167 |
| **3 August** | *t*wireless = 618 s  τwireless = 74.91 %  *Q*wireless = 0.797 | *t*wired = 207 s  τwired = 25.09 %  *Q*wired = 4.182 | *t*wireless = 1290 s  τwireless = 92.08 %  *Q*wireless = 0.980 | *t*wired = 111 s  τwired = 7.92 %  *Q*wired = 1.320 |
| **9 August** | *t*wireless = 561 s  τwireless = 75.20 %  *Q*wireless = 0.800 | *t*wired = 185 s  τwired = 24.80 %  *Q*wired = 4.133 | *t*wireless = 1102 s  τwireless = 91.38 %  *Q*wireless = 0.972 | *t*wired = 104 s  τwired = 8.62 %  *Q*wired = 1.437 |
| **Total** | *t*wireless = 7227 s  τwireless = 80.43 % | *t*wired = 1759 s  τwired = 19.57 % | *t*wireless = 14548 s  τwireless = 93.54 % | *t*wired = 1005 s  τwired = 6.46 % |
| **Mean**  **± s. d.** | **τwireless = 79.35**  **± 3.62 %**  ***Q*wireless = 0.844**  **± 0.038** | **τwired = 20.65**  **± 3.62 %**  ***Q*wired = 3.4412**  **± 0.603** | **τwireless = 93.21**  **± 1.40 %**  ***Q*wireless = 0.992**  **± 0.015** | **τwired = 6.79**  **± 1.40 %**  ***Q*wired = 1.131**  **± 0.233** |

**Supplementary Table S3:** Times *t* (second) spent by tabanids walking on the wireless (*t*wireless) and wired (*t*wired) areas of the vertical cylindrical test surface in field experiment 3 when the underlying wire was heated or unheated on each experimental day. Relative times: τwireless = *t*wireless/(*t*wireless+*t*wired), τwired = *t*wired/(*t*wireless+*t*wired). Relative-area-normalized relative times: *Q*wireless = τwireless/*A*wireless, *Q*wired = τwired/*A*wired, where *A*wireless = 96 % is the relative area of the test surface without underlying wire, and *A*wired = 4 % is the relative area of the surface with underlying wire. s.d.: standard deviation.

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| **Experiment 3**  **Vertical cylindrical test surface (*A*wireless = 96 %, *A*wired = 4 %)** | | | | |
|  | **Heated wire** | | **Unheated wire** | |
| **Experimental**  **day (2022)** | **Wireless**  **area** | **Wired**  **area** | **Wireless**  **area** | **Wired**  **area** |
| **6 July** | *t*wireless = 1512 s  τwireless = 81.51 %  *Q*wireless = 0.849 | *t*wired = 343 s  τwired = 18.49 %  *Q*wired = 4.623 | *t*wireless = 3399 s  τwireless = 94.79 %  *Q*wireless = 0.987 | *t*wired = 187 s  τwired = 5.21 %  *Q*wired = 1.304 |
| **11 July** | *t*wireless = 1320 s  τwireless = 84.56 %  *Q*wireless = 0.881 | *t*wired = 241 s  τwired = 15.44 %  *Q*wired = 3.860 | *t*wireless = 3223 s  τwireless = 95.69 %  *Q*wireless = 0.997 | *t*wired = 145 s  τwired = 4.31 %  *Q*wired = 1.076 |
| **18 July** | *t*wireless = 1267 s  τwireless = 86.25 %  *Q*wireless = 0.898 | *t*wired = 202 s  τwired = 13.75 %  *Q*wired = 3.438 | *t*wireless = 2811 s  τwireless = 95.51 %  *Q*wireless = 0.995 | *t*wired = 132 s  τwired = 4.49 %  *Q*wired = 1.121 |
| **26 July** | *t*wireless = 941 s  τwireless = 84.93 %  *Q*wireless = 0.885 | *t*wired = 167 s  τwired = 15.07 %  *Q*wired = 3.768 | *t*wireless = 2919 s  τwireless = 95.77 %  *Q*wireless = 0.998 | *t*wired = 129 s  τwired = 4.23 %  *Q*wired = 1.058 |
| **31 July** | *t*wireless = 810 s  τwireless = 83.85 %  *Q*wireless = 0.873 | *t*wired = 156 s  τwired = 16.15 %  *Q*wired = 4.037 | *t*wireless = 2871 s  τwireless = 96.18 %  *Q*wireless = 1.002 | *t*wired = 114 s  τwired = 3.82 %  *Q*wired = 0.955 |
| **5 August** | *t*wireless = 583 s  τwireless = 82.58 %  *Q*wireless = 0.860 | *t*wired = 123 s  τwired = 17.42 %  *Q*wired = 4.356 | *t*wireless = 1920 s  τwireless = 95.00 %  *Q*wireless = 0.990 | *t*wired = 101 s  τwired = 5.00 %  *Q*wired = 1.249 |
| **10 August** | *t*wireless = 412 s  τwireless = 78.93 %  *Q*wireless = 0.822 | *t*wired = 110 s  τwired = 21.07 %  *Q*wired = 5.268 | *t*wireless = 1829 s  τwireless = 95.16 %  *Q*wireless = 0.991 | *t*wired = 93 s  τwired = 4.84 %  *Q*wired = 1.210 |
| **Total** | *t*wireless = 6845 s  τwireless = 83.61 % | *t*wired = 1342 s  τwired = 16.39 % | *t*wireless = 18972 s  τwireless = 95.47 % | *t*wired = 901 s  τwired = 4.53 % |
| **Mean**  **± s. d.** | **τwireless = 83.23**  **± 2.45 %**  ***Q*wireless = 0.867**  **± 0.026** | **τwired = 16.77**  **± 2.45 %**  ***Q*wired = 4.193**  **± 0.613** | **τwireless = 95.44**  **± 0.49 %**  ***Q*wireless = 0.994**  **± 0.005** | **τwired = 4.56**  **± 0.49 %**  ***Q*wired = 1.139**  **± 0.122** |

**Supplementary Table S4:** Single-factor ANOVA test for experiment 1.

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| **SUMMARY** |  |  |  |  |  |  |
| **Groups** | **Count** | **Sum** | **Average** | **Variance** |  |  |
| Qwireless with heated wire | 7 | 6.9371 | 0.9910 | 0.0002 |  |  |
| Qwire with heated wire | 7 | 7.9851 | 1.1407 | 0.0587 |  |  |
| Qwireless with unheated wire | 7 | 7.0296 | 1.0042 | 0.0001 |  |  |
| Qwire with unheated wire | 7 | 6.5358 | 0.9337 | 0.0279 |  |  |
|  |  |  |  |  |  |  |
| **ANOVA** |  |  |  |  |  |  |
| **Source of variation** | **SS** | **df** | **MS** | **F** | **P-value** | **F crit** |
| Between groups | 0.1616 | 3 | 0.0539 | 2.4787 | 0.0855 | 3.0088 |
| Within groups | 0.5216 | 24 | 0.0217 |  |  |  |
|  |  |  |  |  |  |  |
| Total | 0.6832 | 27 |  |  |  |  |

**Supplementary Table S5:** Single-factor ANOVA test for experiment 2.

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| **SUMMARY** |  |  |  |  |  |  |
| **Groups** | **Count** | **Sum** | **Average** | **Variance** |  |  |
| Qwireless with heated wire | 7 | 5.9093 | 0.8442 | 0.0015 |  |  |
| Qwire with heated wire | 7 | 24.0881 | 3.4412 | 0.3633 |  |  |
| Qwireless with unheated wire | 7 | 6.9412 | 0.9916 | 0.0002 |  |  |
| Qwire with unheated wire | 7 | 7.9205 | 1.1315 | 0.0541 |  |  |
|  |  |  |  |  |  |  |
| **ANOVA** |  |  |  |  |  |  |
| **Source of variation** | **SS** | **df** | **MS** | **F** | **P-value** | **F crit** |
| Between groups | 31.8551 | 3 | 10.6184 | 101.3482 | 0 | 3.0088 |
| Within groups | 2.5145 | 24 | 0.1048 |  |  |  |
|  |  |  |  |  |  |  |
| Total | 34.3696 | 27 |  |  |  |  |

**Supplementary Table S6:** Single-factor ANOVA test for experiment 3.

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| **SUMMARY** |  |  |  |  |  |  |
| **Groups** | **Count** | **Sum** | **Average** | **Variance** |  |  |
| Qwireless with heated wire | 7 | 6.0688 | 0.8670 | 0.0007 |  |  |
| Qwire with heated wire | 7 | 29.3491 | 4.1927 | 0.3756 |  |  |
| Qwireless with unheated wire | 7 | 6.9595 | 0.9942 | 0.00003 |  |  |
| Qwire with unheated wire | 7 | 7.9732 | 1.1390 | 0.0148 |  |  |
|  |  |  |  |  |  |  |
| **ANOVA** |  |  |  |  |  |  |
| **Source of variation** | **SS** | **df** | **MS** | **F** | **P-value** | **F crit** |
| Between groups | 53.7731 | 3 | 17.9244 | 183.3275 | 0 | 3.0088 |
| Within groups | 2.3465 | 24 | 0.0978 |  |  |  |
|  |  |  |  |  |  |  |
| Total | 56.1196 | 27 |  |  |  |  |